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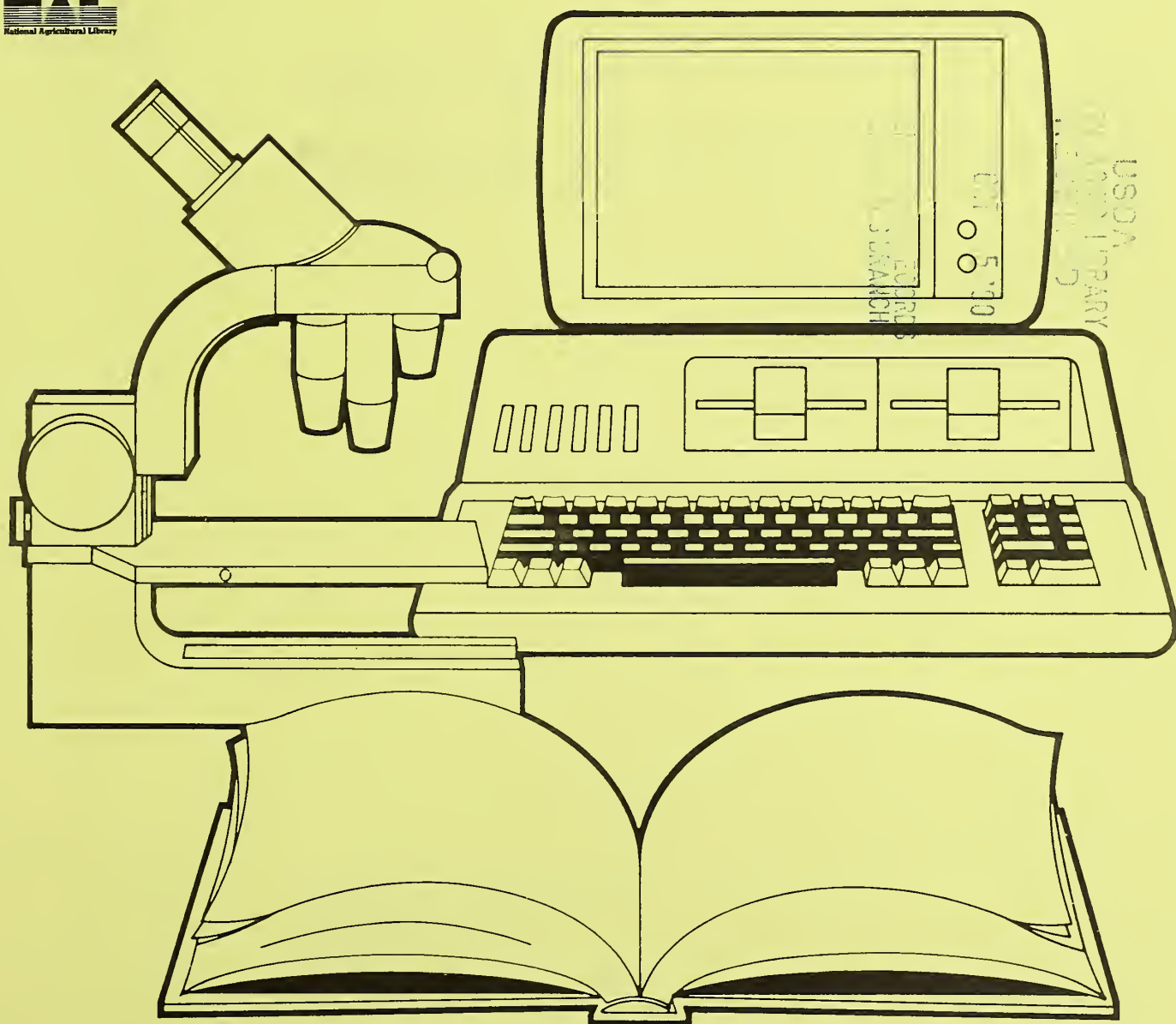
Bibliographies
and Literature
of Agriculture
Number 97

September 1990



The Protection of Tropical and Subtropical Fruits, 1979 - April 1990

Citations from AGRICOLA Concerning Diseases and other Environmental Considerations





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Compiled and Edited by

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National Agricultural Library

National Agricultural Library
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FOREWORD

This is the 33d volume in a series of commodity-oriented environmental bibliographies resulting from a memorandum of understanding between the U.S. Department of Agriculture, National Agricultural Library (USDA-NAL), and the U.S. Environmental Protection Agency, Office of Pesticide Programs (EPA-OPP).

This close working relationship between the two agencies will produce a series of bibliographies which will be useful to EPA in the regulation of pesticides, as well as to any researcher in the field of plant or commodity protection. The broad scope of information contained in this series will benefit USDA, EPA, and the agricultural community as a whole.

The sources referenced in these bibliographies include the majority of the latest available information from U.S. publications involving commodity protection throughout the growing and processing stages for each agricultural commodity.

We welcome the opportunity to join this cooperative effort between USDA and EPA in support of the national agricultural community.

JOSEPH H. HOWARD, Director
National Agricultural Library

DOUGLAS D. CAMPT, Director
Office of Pesticide Programs

INTRODUCTION

The citations in this bibliography, *The Protection of Tropical and Subtropical Fruits*, are selected from the AGRICOLA (AGRICultural OnLine Access) database limited to those produced by North American authors. They cover articles or monographic publications added to the database from 1979 - April 1990.

This is the 33d bibliography in a series of commodity-oriented listings of citations from AGRICOLA jointly sponsored by the U.S. Department of Agriculture, National Agricultural Library (USDA-NAL), and the U.S. Environmental Protection Agency, Office of Pesticide Programs (EPA-OPP). Additional volumes issued recently include *The Protection of Cotton, 1985 - 1989*, *The Protection of Soybeans, 1985 - 1989*, *The Protection of Small Fruits and Berries*, *The Protection of Grapes and Cherries*, *The Protection of Ornamental Plants*, *The Protection of Farm Animals*, and *The Protection of Wildlife and Vertebrate Pest Control*. The 1990 volumes include *The Protection of Tropical and Subtropical Fruits*, *The Protection of Small Grains (other than Wheat, Rice or Sorghums)*, *The Protection of Cucurbits*, *The Protection of Minor Vegetable Crops*, *The Protection of Beans, Peas, and Lentils*, and *The Protection of Forestry*.

Entries in the bibliography are subdivided into a series of section headings used in the contents of the *Bibliography of Agriculture*. Each item appears under every section heading assigned to the cited document. A personal author index is also included in the publication and a site index to plants follows the personal author index.

The U.S. Environmental Protection Agency contact for this project is Richard B. Peacock, Office of Pesticides and Toxic Substances.

Any comments or questions concerning this bibliography may be addressed to the compiler and editor:

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Errata

5, 17, 29, 86, 89, 112, 286, 393, 460, 596

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0050

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HAWTA. Awada, M. Wu, I.P.; Suehisa, R.H.; Padgett, M.M. Honolulu, Hawaii : The Station. Technical bulletin - Hawaii Agricultural Experiment Station, University of Hawaii. Includes statistical data. Dec 1979. (103). 20 p. Includes references. (NAL Call No.: DNAL 100 H313T).

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PHYTAJ. Ploetz, R.R. Schaffer, B. St. Paul, Minn. : American Phytopathological Society. Greenhouse studies were conducted to determine the effects of Phytophthora root rot (caused by *Phytophthora cinnamomi*) and flooding on avocado (*Persea americana*). In addition to standard disease assessments (root necrosis, root colonization, wilt, and defoliation), dry weight accumulations and gas exchange characteristics were monitored as indicators of host distress. In a peat-perlite potting medium with a high water-holding capacity, net CO2 assimilation, transpiration, stomatal conductance for CO2, and root and shoot dry

(PLANT PRODUCTION - HORTICULTURAL CROPS)

weights were reduced by root rot (P less than 0.05). In this medium, flooding alone generally did not reduce these parameters after 5 days. In a calcareous soil used for avocado production in south Florida (with a lower water-holding capacity than the potting medium), root rot reduced assimilation, transpiration, and conductance in a series of three experiments, although not consistently. In this soil, flooding alone reduced these parameter as well. After 4 wk of flooding, assimilation, transpiration, and conductance declined to nondetectable levels. However, when plants with root rot were flooded, these physiological parameters were reduced as soon as 3 days after flooding began, and they declined to nondetectable levels within 1 wk. These plants also had reduced root, shoot, and total plant dry weight accumulations and increased defoliation when compared with nonflooded plants without root rot. Although similar reductions occurred for nonflooded plants with root rot and flooded plants without root rot, these reductions were not as great or consistent as those detected for the combined root rot and flooding treatment. In combination, *Phytophthora* root rot and flooding dramatically impaired photosynthesis and normal stomatal function and reduced the root and shoot biomass in avocado. *Phytopathology*. Feb 1989. v. 79 (2). p. 204-208. Includes references. (NAL Call No.: DNAL 464.8 P56).

0052

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Growth and yield of mango trees at three stages of development influenced by rootstock, scion variety. JAUPA. Perez, A. Cedeno-Maldonado, A.; Reyes, I.; Lopez, J. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Oct 1987. v. 71 (4). p. 341-348. Includes references. (NAL Call No.: DNAL 8 P832J).

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Growth, yield, nutrient content and fruit quality of *Carica papaya* L. under controlled conditions. I. Nitrogen effects. Perez, A. Childers, N.F. Rio Piedras, University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1982. v. 66 (2). p. 71-79. ill. 21 ref. (NAL Call No.: 8 P832J).

(PLANT PRODUCTION - HORTICULTURAL CROPS)

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Growth, yield, nutrient content and fruit quality of *Carica papaya* L. under controlled conditions. II. Boron effects.
Perez, A. Childers, N.F. Rio Piedras, University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1982. v. 66 (2). p. 80-88. ill. 19 ref. (NAL Call No.: 8 P832J).

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History and development of fruit differentiation growth and ripening control in pineapple.
PPGGD. Williams, D.D.F. Lake Alfred, Fla. : The Society. Proceedings annual meeting - Plant Growth Regulator Society of America. 1987. (14th). p. 413-422. Includes references. (NAL Call No.: DNAL SB128.P5).

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A look at current avocado rootstocks.
Coffey, M. Fallbrook, Calif. : Rancher Publications. California grower. Apr 1987. v. 11 (4). p. 15-17. (NAL Call No.: DNAL SB379.A9A9).

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Shaw, P.E. Westport, Conn., AVI Pub. Co., 1980. Tropical and subtropical fruit : composition, properties, and uses, by Steven Nagy, Philip E. Shaw. Literature review. p. 479-491. Bibliography p. 489-491. (NAL Call No.: TX557.N33).

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Modeling of PAR interception and productivity of a prickly pear cactus, *Opuntia ficus-indica* L., at various spacings.
AGJ0AT. Cortazar, V.C. de. Nobel, P.S. Madison, Wis. : American Society of Agronomy. Agronomy journal. Jan/Feb 1986. v. 78 (1). p. 80-85. ill. Includes references. (NAL Call No.: DNAL 4 AM34P).

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A new approach to thinning olives (Chemicals). Martin, G.C. CA. Lavee, S.; Sibbett, G.S.; Nishijima, C.; Carlson, S.P. Berkeley, Calif., The Station. California agriculture - California Agricultural Experiment Station. Aug/Sept 1980. v. 34 (8/9). p. 7-8. ill. (NAL Call No.: 100 C12CAG).

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Papaya fruit yield and quality as influenced by crop rotation, cover cropping, liming, and soil fumigation in Hawaii /O.R. Younge and D.L. Plucknett.

Younge, O. R. 1901-. Plucknett, Donald L.,_1931-. Honolulu, Hawaii (2500 Dole St. Krauss Hall 108, Honolulu 96822) : Hawaii Institute of Tropical Agriculture and Human Resources, College of Tropical Agriculture and Human Resources, University of Hawaii, 1981. 30 p. : ill. ; 23 cm. Bibliography: p. 28-30. (NAL Call No.: DNAL 100 H313 (1) no.155).

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Bartholomew, D.P. Paull, R.E. Boca Raton, Fla. : CRC Press, 1986. CRC handbook of fruit set and development / edited by Shaul P. Monselise. Literature review. p. 371-388. Includes references. (NAL Call No.: DNAL SB357.28.C73).

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Pineapple cultureVIThe effect of fertilizers upon the quality of the fruit /by A.W. Blair and R.N. Wilson.

Blair, A. W. 1866-. Wilson, R. N._1888-. Gainesville, Fla. : Florida Agricultural Experiment Station, 1910. Cover title. p. 27 -42 ; 23 cm. (NAL Call No.: DNAL 100 F66S (1) no.101).

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Possible rejuvenation of adult avocado by graftage onto juvenile rootstocks in vitro. HUHSA. Pliego-Alfaro, F. Murashige, T. Alexandria, Va. : American Society for Horticultural Science. HortScience. Dec 1987. v. 22 (6). p. 1321-1324. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

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Postharvest handling systems: tropical fruits.

Sommer, N.F. Berkeley, Calif. : Coop Ext. Univ of California, Div of Agric and Natural Resources, 1985. Postharvest technology of horticultural crops / Adel A. Kadar et al. . p. 157-169. ill. Includes references. (NAL Call No.: DNAL SB319.7.P67).

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Croneauer, S.S. Krikorian, A.D. Alexandria, Va. : American Society for Horticultural Science. HortScience. Apr 1984. v. 19 (2). p. 234-235. ill. Includes references. (NAL Call No.: SB1.H6).

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Paull, R.E.HUHSA. Goo, T. Alexandria : American Society for Horticultural Science. HortScience. Feb 1983. v. 18 (1). p. 65-67. ill. Includes references. (NAL Call No.: SB1.H6).

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Lakshinarayana, S. Westport, Conn., AVI Pub. Co., 1980. Tropical and subtropical fruit : composition, properties, and uses, by Steven Nagy, Philip E. Shaw. Literature review. p. 415-441. Bibliography p. 438-441. (NAL Call No.: TX557.N33).

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Somatic embryogenesis and plant regeneration in suspension cultures of dessert (AA and AAA) and cooking (ABB) bananas (*Musa* spp.).

Novak, F.J. Afza, R.; Van Duren, M.; Perea-Dallos, M.; Conger, B.V.; Xiaolang, T. New York, N.Y. : Nature Publishing Company. Bio/technology. Feb 1989. v. 7 (2). p. 154-159. ill. Includes references. (NAL Call No.: DNAL QH442.B5).

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Somatic embryogenesis in cell cultures of *Carica stipulata* (Large-scale production model).

Litz, R.E. Conover, R.A. Alexandria, Va., American Society for Horticultural Science. HortScience. Dec 1980. v. 15 (6). p. 733-735. ill. 11 ref. (NAL Call No.: SB1.H6).

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Crosswhite, C.D. Crosswhite, F.S. Superior : University of Arizona. Desert plants. 1986. v. 7 (4). p. 195-203. ill. Includes references. (NAL Call No.: DNAL QK938.D4D4).

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JPNUDS. Klein, I. Zilkah, S. New York, N.Y. : Marcel Dekker. Journal of plant nutrition. 1986. v. 9 (11). p. 1415-1425. Includes references. (NAL Call No.: DNAL QK867.J67).

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The use of artificial windbreaks for protecting kiwifruit in New Zealand.

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No.: DNAL S27.A3).

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ANURA. Blazich, F.A. Chicago, Ill. : American Nurseryman Publishing Co. American nurseryman. Apr 1, 1987. v. 165 (7). p. 140-143. (NAL Call No.: DNAL 80 AM371).

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Volatile constituents of mountain papaya (*Carica candamarcensis*, syn. *C. pubescens* Lenne et Koch) fruit.

JAFCAU. Idstein, H. Keller, T.; Schreier, P. Washington, D.C. : American Chemical Society. Journal of agricultural and food chemistry. July/Aug 1985. v. 33 (4). p. 663-666. Includes references. (NAL Call No.: DNAL 381 J8223).

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Evaluation of insecticides and application methods for controlling the banana corm weevil (*Cosmopolites sordidus* Germar). Spanish.

JAUPA. Ingles, R. Rodriguez, J. Rio Piedras, R.R. : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1989. v. 73 (2). p. 97-107. Includes references. (NAL Call No.: DNAL 8 P832J).

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Foliar application of potassium nitrate for advancing and inducing the flowering of the Manila mango cultivar in Mexico (Harvesting control). Spanish.

Mosqueda Vazquez, R. Santos de la Rosa, F. de los. (v.p.) : The Society. Proceedings of the Tropical Region, American Society for Horticultural Science : annual meeting. 1982. v. 25. p. 311-316. Includes references. (NAL Call No.: 81 AM325).

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Treatments for the defoliation and growth, flowering, and production of soursop trees (*Annona muricata* L.). Spanish.

JAUPA. Cruz-Castillo, J.G. Cedeno-Maldonado, A. Rio Piedras, R.R. : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1989. v. 73 (2). p. 141-148. ill. Includes references. (NAL Call No.: DNAL 8 P832J).

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Internal temperatures of pricklypear cladophylls during prescribed fire in west Texas (Cactus control, *Opuntia lindheimeri*, *Opuntia edwardsii*, range management, ecology). Potter, R.L. Ueckert, D.N.; Petersen, J.L. College Station : The Station. PR - Texas Agricultural Experiment Station. July 1983. July 1983. (4132). 10 p. Includes references. (NAL Call No.: 100 T31P).

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Abscission of mango fruitlets as influenced by enhanced ethylene biosynthesis.

PLPHA. Nunez-Elisea, R. Davenport, T.L. Rockville, Md. : American Society of Plant Physiologists. Plant physiology. Dec 1986. v. 82 (4). p. 991-994. Includes references. (NAL Call No.: DNAL 450 P692).

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Agrobacterium-mediated gene transfer in papaya.

JOSHB. Pang, S.Z. Sanford, J.C. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. Mar 1988. v. 113 (2). p. 287-291. ill. Includes references. (NAL Call No.: DNAL 81 S012).

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Aseptic culture techniques for banana and plantain improvement (Black Sigatoka disease, breeding for disease resistance, tissue culture).

Krikorian, A.D. Cronauer, S.S. New York, N.Y. : New York Botanical Garden. Economic botany. July/Sept 1984. v. 38 (3). p. 322-331. ill. Includes 37 references. (NAL Call No.: 450 EC7).

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Avocado research: a progress report.

Bender, G. Fallbrook, Calif. : Rancher Publications. California grower. July 1988. 3b v. 12 (7). p. 21-22, 25. ill. (NAL Call No.: DNAL SB379.A9A9).

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Avocado tree called Barr Duke.

Coffey, M.D. Guillemet, F.B. Washington, D.C. : The Office. A new and distinct rootstock variety of avocado tree characterized by its high yield resistance to Phytophthora root rot caused by Phytophthora cinnamomi. This variety has a high level of resistance comparable to the 'Duke 7' rootstock variety. It is also characterized under some field conditions by producing a somewhat smaller tree, when grafted with a 'Haas' scion, than that typical of a 'Duke 7' rootstock. Plant patent - United States Patent and Trademark Office. Feb 21, 1989. (6627). 1 p. plates. (NAL Call No.: DNAL 156.65 P69).

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Avocado tree called Thomas.

Coffey, M.D. Guillemet, F.B. Washington, D.C. : The Office. A new and distinct rootstock variety of avocado tree characterized by its high field resistance to Phytophthora root rot caused by Phytophthora cinnamomi. This variety has the highest level of resistance of any rootstock currently identified. It is characterized by relative ease of propagation using the etiolation method and graft compatibility with commercial scion varieties, including 'Hass', 'Gwen', 'Pinkerton', 'Fuerte', 'Bacon' and 'Zutano'. Plant patent - United States Patent and Trademark Office. Feb 21, 1989. (6628). 2 p. plates. (NAL Call No.: DNAL 156.65 P69).

0101

'Cariflora'---a papaya ringspot virus-tolerant papaya for south Florida and the Caribbean.

HUHSA. Conover, R.A. Litz, R.E.; Malo, S.E. Alexandria, Va. : American Society for Horticultural Science. HortScience. Aug 1986. v. 21 (4). p. 1072. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

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Cariflora, a papaya for south Florida with tolerance to papaya ringspot virus.

Conover, R.A. Litz, R.E.; Malo, S.E. Gainesville : The Institute. Circular S - Florida Agricultural Experiment Stations, Institute of Food and Agricultural Sciences, University of Florida. May 1986. (329). 4 p. ill. (NAL Call No.: DNAL 100 F66CI).

0103

Chemistry and ripening of the date /by A.E. Vinson ; Ripening dates by incubation / by G.F. Freeman.

Vinson, A. E. 1873-. Freeman, George Fouche, 1876-1930. Tucson, Ariz. : University of Arizona, 1911. "May 1, 1911."~ Cover title. p. 403-456 : ill. ; 23 cm. Includes bibliographical references. (NAL Call No.: DNAL 100 Ar4 no.66).

0104

Coconut cadang-cadang viroid.

Randles, J.W. Orlando, Fla. : Academic Press, 1985. Subviral pathogens of plants and animals : viroids and prions / edited by Karl Maramorosch, John J. McKelvey. p. 39-74. ill. Includes references. (NAL Call No.: DNAL QR500.S83).

0105

Control of papaya ringspot virus by cross protection.

PLDIDE. Yeh, S.D. Gonsalves, D.; Wang, H.L.; Namba, R.; Chiu, R.J. St. Paul, Minn. : American Phytopathological Society. Plant disease. May 1988. v. 72 (5). p. 375-380. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0106

Cultivar identification of Japanese persimmon by leaf isozymes.

HUJSA. Tao, R. Sugiura, A. Alexandria, Va. : American Society for Horticultural Science. HortScience. Oct 1987. v. 22 (5). p. 932-935. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

0107

Current status of breeding for papaya virus resistance.

Nakasone, H.Y. HI. Honolulu, The Service. Miscellaneous publication - Hawaii University. Cooperative Extension Service. Apr 1980. Apr 1980. (178). p. 12. (NAL Call No.: S544.3.H3H3).

0108

Current status of papaya improvement program (Breeding, disease resistant cultivars, Hawaii).

Nakasone, H.Y. Aragaki, M. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. July 1983. Presented at the 18th annual Hawaii Papaya Industry Association Conference, Honolulu, October, 1982. July 1983. (033). p. 51-55. (NAL Call No.: S481.R4).

0109

Diallel analysis of root rot resistance in papaya (Phytophthora palmivora, Hawaii).

Mosqueda-Vazquez, R. Nakasone, H.Y. Alexandria, Va., American Society for Horticultural Science. HortScience. June 1982. v. 17 (3). p. 384-385. 6 ref. (NAL Call No.: SB1.H6).

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Effect of dwarfing rootstocks on tree size and yield of selected mango varieties.

JAUPA. Cedeno-Maldonado, A. Perez, A.; Reyes-Soto, I. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Jan 1988. v. 72 (1). p. 1-8. Includes references. (NAL Call No.: DNAL 8 P832J).

0111

Epidemiology and control of bacterial canker of papaya caused by an Erwinia sp. on St. Croix, U.S. Virgin Islands.

PLDRA. Webb, R.R. St. Paul, Minn. : American Phytopathological Society. Plant disease. Apr 1985. v. 69 (4). p. 305-309. ill. Includes 12 references. (NAL Call No.: DNAL 1.9 P69P).

0112

Evaluation and induction of resistance to blue mold in tobacco genotypes differing in contents of duvatrienediols.

PHYTAJ. Rao, M.N. Siegel, M.R.; Nielson, M.T.; Wigglesworth, M.D.; Burton, H.R.; Kuc, J. St. Paul, Minn. : American Phytopathological Society. The alpha- and beta-4.8,13-duvatrien-1,3-diols (DVT) are fungitoxic leaf-surface components of tobacco. Tobacco Introductions (TI), double haploid breeding lines, and cultivar Ky 14, with different DVT contents, were evaluated for resistance to blue mold caused by Peronospora tabacina Adam. DVT contents varied significantly in plants grown at different times of the year and increased with age. TI 1068 and the double haploid breeding lines, DH 944-1, DH 909-2, and DH-960, had higher DVT contents than Ky 14 and were more resistant to blue mold than Ky 14. However, although DH 909-2 was the most resistant genotype in greenhouse tests, it did not have the highest DVT contents. TI 1406, with lower contents of DVT than Ky 14, was somewhat more susceptible in greenhouse tests and considerably more susceptible in field tests. TI 1112, however, with little or no DVT, was highly resistant in greenhouse and field tests. In greenhouse tests, systemic resistance was induced in all types of tobacco by stem injection with sporangiospores of P. tabacina, except in TI 1112, which already was highly resistant. DVT contents did not significantly change in stem-injected plants. Removal of DVT by acetone dipping increased susceptibility to blue mold in the early stages of growth, but not in the later stages of field-grown tobacco, which contained DVT. For all genotypes, the oldest plants sampled in the field test (83 days after transplanting) appeared immune. Linear correlations of disease with DVT for individual sampling dates indicated no significant effect of variation in DVT contents among genotypes on disease severity. The disease resistance-DVT relationship is very complex. DVT contents were apparently not responsible for induced resistance or the high resistance of plants sampled late in the season (83 days after transplanting). DVT contents are not the only factors determining resistance to blue mold; however, they may have a contributory role. Phytopathology. Mar 1989. v. 79 (3). p. 271-275. Includes references. (NAL Call No.: DNAL 464.8 P56).

0113

Evaluation of the adaptation of *Cocos nucifera* L. 'Maypan' to the Florida landscape (Coconut palms).

Donselman, H.M. S.I., The Society. Proceedings of the ... annual meeting of the Florida State Horticultural Society. 1981 (pub. 1982). v. 94. p. 200-201. Includes 2 ref. (NAL Call No.: 81 F66).

0114

Genetic selection during the abscission of avocado fruitlets.

HJHSA. Degani, C. Goldring, A.; Gazit, S.; Lavi, U. Alexandria, Va. : American Society for Horticultural Science. HortScience. Oct 1986. v. 21 (5). p. 1187-1188. Includes references. (NAL Call No.: DNAL SB1.H6).

0115

Growth and yield of mango trees at three stages of development influenced by rootstock, scion variety.

JAUPA. Perez, A. Cedeno-Maldonado, A.; Reyes, I.; Lopez, J. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Oct 1987. v. 71 (4). p. 341-348. Includes references. (NAL Call No.: ONAL 8 P832U).

0116

Hot-water quarantine treatment for mangoes from Mexico infested with Mexican fruit fly and West Indian fruit fly (Diptera: Tephritidae).

JEENAI. Sharp, J.L. Ouye, M.T.; Ingle, S.J.; Hart, W.G. Lanham, Md. : Entomological Society of America. Heated water was used in the development of a quarantine treatment to kill Mexican fruit fly, *Anastrepha ludens* (Loew), and West Indian fruit fly, *A. obliqua* (Macquart) infestations in mango, *Mangifera indica* L. Mangoes from Mexico were infested in the laboratory and immersed in water at 46.1 degrees C for 10-70 min to estimate time-mortality relationships. Probit analysis of the data estimated the immersion time needed to reach Probit 9 security for a laboratory strain of *A. ludens* as 65.1 min for mixed cultivars ('Haden', 'Tommy Atkins', 'Keitt', and 'Kent'). For a feral strain (wild) in 'Haden', the estimated immersion time was 71.4 min. The estimated immersion times for Probit 9 security for *A. obliqua* in 'Kent' were 66.8 min for a laboratory strain and 83.6 min for a wild strain. A large-scale test resulted in no survivors based on number of normal pupae when 187,114 *A. ludens* (laboratory) in 4,864 'Keitt' and 'Oro'; 226,054 *A. ludens* (wild) in 5,530 'Haden' and 'Tommy Atkins'; 116,869 *A. obliqua* (wild) in 7,703 'Kent'; and 101,049 *A. obliqua* (laboratory) in 8,775 'Keitt', 'Haden', and 'Tommy Atkins' were immersed in water at 46.1 degrees C for 90 min. The market quality of

mangoes immersed in water at 46.1 degrees C depended on cultivar, size and shape, maturity, and handling procedures. 'Oro' mangoes immersed in water for 75 min were not damaged. The percentage of acceptable 'Oro' immersed for 90, 105, and 120 min was reduced to 80, 85, and 15%, respectively. 'Kent', 'Tommy Atkins', and 'Keitt' mangoes immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 7, 11, and 14 d were not damaged. 'Haden' mangoes immersed in water at 46.1 degrees C for 90 min, not refrigerated, and held at 23.9 +/- 1 degrees C. were acceptable for 12 d. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1657-1662. Includes references. (NAL Call No.: DNAL 421 J822).

0117

Infestation of carambolas by laboratory-reared Caribbean fruit flies (Diptera: Tephritidae): effects of fruit ripeness and cultivar.

JEENAI. Howard, D.F. Kenney, P. College Park, Md. : Entomological Society of America. Journal of economic entomology. Apr 1987. v. 80 (2). p. 407-410. Includes references. (NAL Call No.: ONAL 421 J822).

0118

Interrelationship of gene expression, polysome prevalence, and respiration during ripening of ethylene and/or cyanide-treated avocado fruit (*Persea americana*).

Tucker, M.L. Laties, G.G. Rockville, Md. : American Society of Plant Physiologists. Plant physiology. Feb 1984. v. 74 (2). p. 307-315. ill. Includes references. (NAL Call No.: 450 P692).

0119

Large market potential seen for the Chinese date (*jujube*).

Sweet, C. Vista, Calif. : Rancher Pub. California grower. Dec 1985. v. 9 (12). p. 41-43, 48. Includes references. (NAL Call No.: DNAL SB379.A9A9).

0120

Light-dependence for fruiting body formation and its inheritance in *Phoma caricae-papayae* (Fungi, genetic basis).

Honda, Y. MYCOA. Aragaki, M. Bronx : The New York Botanical Garden. Mycologia. Jan/Feb 1983. v. 75 (1). p. 22-29. ill. 20 ref. (NAL Call No.: 450 M99).

0121

Mealybug wilt, mealybugs, and ants on pineapple.

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PHYTAU. Ploetz, R.R. Schaffer, B. St. Paul, Minn. : American Phytopathological Society. Greenhouse studies were conducted to determine the effects of *Phytophthora* root rot (caused by *Phytophthora cinnamomi*) and flooding on avocado (*Persea americana*). In addition to standard disease assessments (root necrosis, root colonization, wilt, and defoliation), dry weight accumulations and gas exchange characteristics were monitored as indicators of host distress. In a peat-perlite potting medium with a high water-holding capacity, net CO₂ assimilation, transpiration, stomatal conductance for CO₂, and root and shoot dry weights were reduced by root rot (P less than 0.05). In this medium, flooding alone generally did not reduce these parameters after 5 days. In a calcareous soil used for avocado production in south Florida (with a lower water-holding capacity than the potting medium), root rot reduced assimilation, transpiration, and conductance in a series of three experiments, although not consistently. In this soil, flooding alone reduced these

parameter as well. After 4 wk of flooding, assimilation, transpiration, and conductance declined to nondetectable levels. However, when plants with root rot were flooded, these physiological parameters were reduced as soon as 3 days after flooding began, and they declined to nondetectable levels within 1 wk. These plants also had reduced root, shoot, and total plant dry weight accumulations and increased defoliation when compared with nonflooded plants without root rot. Although similar reductions occurred for nonflooded plants with root rot and flooded plants without root rot, these reductions were not as great or consistent as those detected for the combined root rot and flooding treatment. In combination, *Phytophthora* root rot and flooding dramatically impaired photosynthesis and normal stomatal function and reduced the root and shoot biomass in avocado. *Phytopathology*. Feb 1989. v. 79 (2). p. 204-208. Includes references. (NAL Call No.: DNAL 464.8 P56).

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JAUPA. Perez, A. Cedeno-Maldonado, A.; Reyes, I.; Lopez, J. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Oct 1987. v. 71 (4). p. 341-348. Includes references. (NAL Call No.: DNAL 8 P832J).

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PLPHA. Kanellis, A.K. Solomos, T.; Mattoo, A.K. Rockville, Md. : American Society of Plant Physiologists. The effect of 2.5% O₂ atmosphere with and without ethylene on the activities of hydrolytic enzymes associated with cell walls, and total protein profile during ripening of avocado fruits (*Persea americana* Mill., cv Hass) were investigated. The low 2.5% O₂ atmosphere prevented the rise in the activities of cellulase, polygalacturonase, and acid phosphatase in avocado fruits whose ripening was initiated with ethylene. Addition of 100 microliters per liter ethylene to low O₂ atmosphere did not alter these suppressive effects of 2.5% O₂. Furthermore, 2.5% O₂ atmosphere delayed the development of a number of polypeptides that appear during ripening of avocado fruits while at the same time new polypeptides accumulated. The composition of the extraction buffer and its pH greatly affected the recovery of cellulase activity and its total immunoreactive protein. Plant physiology. May 1989. v. 90 (1). p. 259-266. ill. Includes references. (NAL Call No.: DNAL 450 P692).

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Modeling of PAR interception and productivity of a prickly pear cactus, *Opuntia ficus-indica* L., at various spacings.
AGUOAT. Cortazar, V.C. de. Nobel, P.S. Madison, Wis. : American Society of Agronomy. Agronomy journal. Jan/Feb 1986. v. 78 (1). p. 80-85. ill. Includes references. (NAL Call No.: DNAL 4 AM34P).

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Hummel, R.L. Johnson, C.R. Nashville : The Association. Proceedings of SNA Research Conference - annual report - Southern Nurserymen's Association. 1984. (29th). p. 101-105. Includes 8 references. (NAL Call No.: DNAL SB403.S68).

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Nitrogen and potassium fertilization effects on fruiting and petiole composition of 24- to 48-month old papaya plants.

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JAUPA. Irizarry, H. Rivera, E.; Rodriguez, J. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. July 1988. v. 72 (3). p. 337-351. Includes references. (NAL Call No.: DNAL 8 P832U).

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Optimizing somatic embryo production in mango. JOSHB. Dewald, S.G. Litz, R.E.; Moore, G.A. Alexandria, Va. : The Society. Medium components and characteristics that affect the growth of embryogenic mango (*Mangifera indica* L.) nucellar cultures and production of somatic embryos in vitro were studied. These included the role of complex organic supplements, basal medium formulations, solidifying agents, and liquid vs. solid media. Growth of embryogenic

cultures in suspension was more efficient than on solid medium; however, subculture onto solid medium was essential for high-frequency production of morphologically normal somatic embryos, and Gelrite was more effective in this respect than Difco Bacto-agar. Modified B-5 basal medium was better for maintenance of cultures and for production of morphologically normal somatic embryos than either Murashige and Skoog or Woody Plant Medium. Sucrose concentrations at 5% to 6% were optimal for somatic embryo production, and also increased the frequency of recovery of normally differentiated early heart-shaped somatic embryos. Coconut water (20%, v/v) enhanced somatic embryo production by 18%; other complex organic addenda alone or in combination with coconut water were either ineffective (casein hydrolysate) or highly inhibitory (yeast extract) in comparison with basal medium alone. Journal of the American Society for Horticultural Science. July 1989. v. 114 (4). p. 712-716. ill. Includes references. (NAL Call No.: DNAL 81 S012).

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Palm tissue culture : state of the art and its application to the coconut / by A. Kovoov. -. Kovoov, A. Rome Food and Agriculture Organization of the United Nations 1981. Paper presented at the fifth session of the FAO Technical Working Party on Coconut Production, Protection and Processing, Manila, December 1979 -AGPC/MISC/77. 69 p. : ill. ; 28 cm. --. Bibliography: p. 62-69. (NAL Call No.: SB13.F6 no.30).

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Possible rejuvenation of adult avocado by graftage onto juvenile rootstocks in vitro.
HUHSA. Pliego-Alfaro, F. Murashige, T. Alexandria, Va. : American Society for Horticultural Science. HortScience. Dec 1987. v. 22 (6). p. 1321-1324. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

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Rivera, M.A.M. Alvarado y Sosa, L.; Lakshminarayana, S. s.l., The Society. Proceedings of the ... annual meeting of the Florida State Horticultural Society. June 1, 1980. v. 92. p. 235-237. ill. 15 ref. (NAL Call No.: 81 F66).

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Proximate characteristics and composition of sapodilla fruits grown in Mexico (*Manilkara achras*, *Achras sapota*, Cultivar, selection, morphology, chemistry).
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Rapid multiplication of bananas and plantains by in vitro shoot tip culture.
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A rapid sap nitrate test for kiwifruit.
JPNUDS. Prasad, M. Spiers, T.M.; Lill, R.E. New York, N.Y. : Marcel Dekker. Journal of plant nutrition. Paper presented at the "Tenth International Plant Nutrition Colloquium", August 4-9, 1986, Beltsville, Maryland. 1987. v. 10 (9/16). p. 1689-1697. Includes references. (NAL Call No.: DNAL QK867.J67).

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Regulation of climacteric respiration in ripening avocado fruit.
PLPHA. Bennett, A.B. Smith, G.M.; Nichols, B.G. Rockville, Md. : American Society of Plant Physiologists. Plant physiology. Apr 1987. v. 83 (4). p. 973-976. Includes references. (NAL Call No.: DNAL 450 P692).

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Reinitiation of vegetative growth from aseptically cultured terminal floral apex of banana.
AUBOA. Cronauer, S.S. Krikorian, A.D. Baltimore, Md. : Botanical Society of America. American journal of botany. Oct 1985. v. 72 (10). p. 1598-1601. ill. Includes references. (NAL Call No.: DNAL 450 AM36).

0255

Relationships between photosynthetically active radiation, nocturnal acid accumulation, and CO₂ (carbon dioxide) uptake for a crassulacean acid metabolims plant, *Opuntia ficus-indica*.
Nobel, P.S. PLPHA. Hartsock, T.L. Rockville : American Society of Plant Physiologists. Plant physiology. Jan 1983. v. 71 (1). p. 71-75. 29 ref. (NAL Call No.: 450 P692).

0256

Relationships of ethanol production by seeds of different types of Japanese persimmons and their tannin content (*Diospyros kaki*, pollination, astringency).
Sugiura, A. HUHSA. Tomana, T. Alexandria : American Society for Horticultural Science. HortScience. June 1983. v. 18 (3). p. 319-321. ill. Includes references. (NAL Call No.: SB1.H6).

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Respiration during postharvest development of soursop fruit, *Annona muricata* L.
PLPHA. Bruinsma, J. Paull, R.E. Rockville, Md. : American Society of Plant Physiologists. Plant physiology. Sept 1984. v. 76 (1). p. 131-138. ill. Includes 24 references. (NAL Call No.: DNAL 450 P692).

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Respiratory CO₂ as carbon source for nocturnal acid synthesis at high temperatures in three species exhibiting crassulacean acid metabolism.
PLPHA. Winter, K. Schroppel-Meier, G.; Caldwell, M.M. Rockville, Md. : American Society of Plant Physiologists. Plant physiology. June 1986. v. 81 (2). p. 390-394. Includes 15 references. (NAL Call No.: DNAL 450 P692).

0259

Respiratory rate, ethylene production, and ripening response of avocado fruit to ethylene or propylene following harvest at different maturities.
Eaks, I.L. Alexandria, Va., The Society. Journal of the American Society for Horticultural Science. Sept 1980. v. 105 (5). p. 744-747. ill. 13 ref. (NAL Call No.: 81 S012).

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Response of container-grown banana, ixora, citrus, and *Dracaena* to elevated root temperatures.
HUHSA. Ingram, D.L. Ramcharan, C.; Nelli, T.A. Alexandria, Va. : American Society for Horticultural Science. HortScience. Apr 1986. v. 21 (2). p. 254-255. Includes references. (NAL Call No.: DNAL SB1.H6).

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Role of ethylene in avocado fruitlet abscission.
Davenport, T.L. PPGGD. Lake Alfred : The Society. Proceedings annual meeting - Plant Growth Regulator Society of America. 1982. 1982. (9th). p. 147-152. ill. Includes references. (NAL Call No.: SB128.P5).

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CAVYA. Borys, M.W. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1986. v. 70. p. 175-198. Includes references.

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BOGAA. Williams, M.H. Vesek, M.; Mullins, M.G. Chicago, Ill. : University of Chicago Press. Botanical gazette. Mar 1989. v. 150 (1). p. 30-40. ill. Includes references. (NAL Call No.: DNAL 450 B652).

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Seasonal patterns in chemical composition of the fruit of *actinidia chinensis* (Chinese gooseberry fruits or "kiwifruit").
Reid, M.S. Heatherbell, D.A.; Pratt, H.K. Alexandria, Va., The Society. Journal of the American Society for Horticultural Science. Mar 1982. v. 107 (2). p. 316-319. Includes 15 ref. (NAL Call No.: 81 S012).

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JOSH5. Manshardt, R.M. Wenslaff, T.F. Alexandria, Va. : The Society. A study of reproductive barriers limiting interspecific hybridization between *Carica papaya* L. and *C. cauliflora* Jacq. was undertaken in four reciprocal interspecific crosses using two different lines of each species. Particular attention was focused on determining whether polyembryonic clusters produced in these crosses were of maternal or zygotic origin. Prezygotic barriers were unimportant; pollen tube penetration and zygote formation were similar in intra- and interspecific crosses. Substantial postzygotic disruptions were observed, including disorganized growth and abortion of hybrid embryos and lack of normal endosperm development. In most crosses, disorganized embryos aborted before differentiating into polyembryonic structures. However, crosses employing UH345 (*C. cauliflora*) as female parent produced some embryos that developed to maturity (6 months), and, in these crosses, embryogenic proliferation from zygotic tissue became evident as early as the beginning of the 3rd month. There was no evidence of somatic embryogenesis from maternal tissues in any cross. Embryos rescued 3 to 6 months after pollination continued embryogenic growth in vitro on basal Murashige and Skoog (MS) medium and germinated on medium containing 0.2 mg BA/liter and 0.5 mg NAA/liter. Zymograms

assayed for isocitrate dehydrogenase, malate dehydrogenase, and phosphoglucomutase activity confirmed the zygotic origin of tissues taken from in vitro cultures and recovered plantlets. Vigor, viability, and fertility (less than 1% stainable pollen) of hybrids recovered from embryo culture were low. Journal of the American Society for Horticultural Science. July 1989. v. 114 (4). p. 684-689. ill. Includes references. (NAL Call No.: DNAL 81 S012).

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JEENAI. Vargas, R.I. Stark, J.D.; Nishida, T. Lanham, Md. : Entomological Society of America. Capture rates for male oriental fruit fly, *Dacus dorsalis* Hendel, were 5-10 times higher on the windward side than on the leeward side of the island of Kauai. In contrast, capture rates for melon fly, *D. cucurbitae* Coquillett, were 3-8 times higher on the leeward side than on the windward side of the island. Peak *D. dorsalis* trap captures occurred during spring and fall after guava, *Psidium guajava* L. and *P. cattleianum* Sabine, fruited in a guava belt above coastal agricultural areas. Peak *D. cucurbitae* trap captures occurred during winter and spring after the wild hosts bitter melon, *Momordica charantia* L., and spiny cucumber, *Cucumis dipsaceus* Ehrenberg ex Spach, fruited and during summer when truck crops were cultivated in agricultural areas. In a typical agricultural area, *D. dorsalis* capture rates were higher outside than inside crop production areas. In contrast, *D. cucurbitae* capture rates were higher inside than outside crop production areas. Results are discussed with respect to population management programs for fruit flies. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1609-1615. maps. Includes references. (NAL Call No.: DNAL 421 J822).

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JEENAI. Hansen, J.D. Webb, J.C.; Armstrong, J.W.; Brown, S.A. College Park, Md. : Entomological Society of America. Abstract: Ultrasensitive sound detection equipment was evaluated for identifying larvae of the oriental fruit fly, *Dacus dorsalis* Hendel (Diptera: Tephritidae), in papaya (*Carica papaya* L.). In each of the eight laboratory tests, 25 fruit were artificially infested at a rate of 20 eggs per fruit; another 25 fruit were used as controls. After larval eclosion, each fruit was examined daily for 2 min using a computer program developed to recognize larval feeding. Accuracy in detecting infested fruit approached 100% 5 d after fruit infestation. The system correctly identified control fruit ca. 85% of the time until the sixth day, when tissue deterioration also produced signals. Factors causing false positives and problems

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Argentine ant management in cherimoyas.
CAGRA. Phillips, P.A. Bekey, R.S.; Goodall, G.E. Berkeley, Calif. : The Station. California agriculture - California Agricultural Experiment Station. Mar/Apr 1987. v. 41 (3/4). p. 8-9. ill. (NAL Call No.: DNAL 100 C12CAG).

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Biological control of two avocado pests.
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Thompson, W. Vista, Calif. : Rancher Pub. Avocado grower. Jan 1984. v. 8 (1). p. 23-27. ill. (NAL Call No.: DNAL SB379.A9A9).

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HJHSA. Zee, F.T. Nishina, M.S.; Chan, H.T. Jr.; Nishijima, K.A. Alexandria, Va. : American Society for Horticultural Science. HortScience. Apr 1989. v. 24 (2). p. 323-325. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

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Effect of mixtures of custard-apple oil and neem oil on survival of *Nephotettix virescens* (Homoptera: Cicadellidae) and on rice tungro virus transmission (*Annona squamosa*, *Azadirachta indica*).
Mariappan, V. Saxena, R.C. College Park, Md. :

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Effect of nonedible seed oils on survival of *Nephotettix virescens* (Homoptera: Cicadellidae) and on transmission of rice tungro virus. JEENAI. Mariappan, V. Jayaraj, S.; Saxena, R.C. College Park, Md. : Entomological Society of America. In a greenhouse study, nonedible oils extracted from seeds of "karanj," *Pongamia pinnata* Pierre; "mahua," *Madhuca longifolia* Koen. Macbr. var. *latifolia* Roxb. Cheval; and "pinna," *Calophyllum inophyllum* L., trees were more effective than the oil of neem, *Azadirachta indica* A. Juss., in reducing the survival of the rice green leafhopper, *Nephotettix virescens* (Distant), and its transmission of the rice tungro viruses (RTV), and as effective as oil of custard-apple, *Annona squamosa* L. Insect mortality was 100% after 4 d on rice plants sprayed with oils at 5% concentration in contrast to 69% insect survival on control plants. RTV infection was 17-35% in oil-treated plants and 51% in the control. Journal of economic entomology. Oct 1988. v. 81 (5). p. 1369-1372. Includes references. (NAL Call No.: DNAL 421 J822).

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The effect of re-release of *Oryctes rhinoceros* baculovirus in the biological control of rhinoceros beetles in Western Samoa (Coconut pest). Marschall, K.J. Ioane, I. New York, Academic Press. Journal of invertebrate pathology. May 1982. v. 39 (3). p. 267-276. ill. 6 ref. (NAL Call No.: 421 J826).

0332

Effects of age, mating, and time of day on behavioral responses of female papaya fruit fly, *Toxotrypana curvicauda* Gerstaecker (Diptera: Tephritidae), to synthetic sex pheromone. EVETEX. Lanoolt, P.J. Heath, R.R. College Park, Md. : Entomological Society of America. Environmental entomology. Feb 1988. v. 17 (1). p. 47-51. Includes references. (NAL Call No.: DNAL QL461.E532).

0333

Effects of diflubenzuron on larval development of *Zaprionus paravittiger* (Godble and Vaidya) (Diptera: Drosophilidae). GENsAB. Chopra, P.K. Rup, P.J. Athens, Ga. : The Society. Journal of Entomological Science. Jan 1985. v. 20 (1). p. 109-114. ill. Includes references. (NAL Call No.: DNAL QL461.G4).

0334

Effects of ionizing irradiation (used for control of *Cryptorhynchus mangiferae* and fruit flies) on 'Haden' mangoes (Tolerance and shelf life).

Akamine, E.K. HI. Goo, T. Honolulu. The Station. Research report. Hawaii. Agricultural Experiment Station. Apr 1979. Apr 1979. (205). 11 p. ill. 16 ref. (NAL Call No.: 100 H313P).

0335

The epizootiology of the baculovirus of the coconut palm rhinoceros beetle (*Oryctes rhinoceros*) in Tonga (Biological control). Young, E.C. Longworth, J.F. New York, Academic Press. Journal of invertebrate pathology. Nov 1981. v. 38 (3). p. 362-369. 16 ref. (NAL Call No.: 421 J826).

0336

Extension of model to predict survival from heat treatment of papaya infested with oriental fruit flies (Diptera: Tephritidae). JEENAI. Hayes, C.F. Young, H. Lannam, Md. : Entomological Society of America. The previously published model used for calculating survival of *Dacus dorsalis* Hendel in papaya (*Carica papaya* L. var. Solo) subjected to a hot-water immersion treatment is extended. The new model allows the calculation of survival for treatments including the vapor heat and dry air treatments. The physical parameter needed to extend the model to these treatments is h, the surface heat transfer coefficient. Measurements of h are reported for papaya in high- and low-humidity environments of moving and static air. Journal of economic entomology. Aug 1989. v. 82 (4). p. 1157-1160. Includes references. (NAL Call No.: DNAL 421 J822).

0337

Field development of the sex pheromone for the western avocado leafroller, *Amorbia cuneana* (Biological control, California).

Bailey, J.B. Hoffman, M.P.; McDonough, L.M. Saticoy, Calif., The Society. Yearbook - California Avocado Society. 1981. v. 65. p. 143-145, 147-149, 151. Includes 2 ref. (NAL Call No.: 81 C128).

0338

Field-testing the sex pheromone for *Amorbia cuneana* in avocados.

CAGRA. Bailey, J.B. Hoffmann, M.P.; McDonough, L.M.; Olsen, K.N. Berkeley, Calif. : The Station. California agriculture - California Agricultural Experiment Station. May/June 1988. v. 42 (3). p. 17-18. ill. (NAL Call No.: DNAL 100 C12CAG).

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0339

Flexible acoustical device to detect feeding sounds of Caribbean fruit fly (Diptera: Tephritidae) larvae in mango, cultivar Francis. JEENAI. Sharp, J.L. Thalman, R.K.; Webb, J.C.; Masuda, S. Lanham, Md. : Entomological Society of America. A flexible detector that transmits feeding sounds of larvae of the Caribbean fruit fly, *Anastrepha suspensa* (Loew), is described. The detector was tested on mango, *Mangifera indica* L., cultivar 'Francis,' which is elongated in shape and compressed laterally. Flexibility eliminates the need for different detectors for each mango size. The detector can be constructed to fit spherical mangos of different sizes or other commodities such as citrus, pome fruits, and stone fruits. Journal of economic entomology. Feb 1988. v. 81 (1). p. 406-409. ill. Includes references. (NAL Call No.: DNAL 421 J822).

0340

Fumigation of avocado fruit with methyl bromide (for fruit fly, *Dacus dorsalis*, *Dacus cucurbitae*, and *Ceratitis capitata*). Ito, P.J. Hamilton, R.A. Alexandria, Va., American Society for Horticultural Science. HortScience. Oct 1980. v. 15 (5). p. 593. 4 ref. (NAL Call No.: SB1.H6).

0341

Greenhouse thrips emerging as number one avocado pest. CAVYA. Bekey, R. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1986. v. 70. p. 99-102. (NAL Call No.: DNAL 81 C128).

0342

Hawaiian fruit flies (Diptera: Tephritidae): toxicity of benzyl isothiocyanate against eggs or 1st instars of three species (*Carica papaya*, *Ceratitis capitata*, *Dacus cucurbitae*, *Dacus dorsalis*). Sec. S.T. JEENA. Tang, C.S. College Park : Entomological Society of America. Journal of economic entomology. Dec 1982. v. 75 (6). p. 1132-1135. 7 ref. (NAL Call No.: 421 J822).

0343

Hawaiian fruit flies in papaya, bell pepper, and eggplant: quarantine treatment with gamma irradiation. JEENAI. Seo, S.T. Kobayashi, R.M.; Chambers, D.L.; Dollar, A.M.; Hanaoka, M. College Park, Md. : Entomological Society of America. Journal of economic entomology. Aug 1973. v. 66 (4). p. 937-939. Includes references. (NAL Call No.: DNAL 421 J822).

0344

High-temperature, forced-air quarantine treatment for papayas infested with tephritid fruit flies (Diptera: Tephritidae). JEENAI. Armstrong, J.W. Hansen, J.D.; Hu, B.K.S.; Brown, S.A. Lanham, Md. : Entomological Society of America. A high-temperature forced-air (HTFA) disinfection treatment using four temperature stages was developed to disinfect Hawaii-grown papaya, *Carica papaya* L. cv. Solo, of the egg and larval stages of Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann); melon fly, *Dacus cucurbitae* Coquillett; and oriental fruit fly, *D. dorsalis* Hendel. The four-stage treatment forced 43 +/- 1, 45 +/- 1, 46.5 +/- 1, and 49 +/- 0.5 degrees C hot air over the papaya surfaces until the fruit center temperatures at the end of each temperature stage reached 41 +/- 1.5, 44 +/- 1, 46.5 +/- 0.75, and 47.2 degrees C, respectively. Each of the first three temperature stages required about 2 h to heat the fruit to the corresponding fruit center temperatures; the last temperature stage required less than 1 h to raise the fruit center temperatures to 47.2 degrees C. Relative humidity of 40-60% during treatment prevented fruit damage. When the fruit center temperatures reached 47.2 degrees C, the papayas were immediately hydrocooled until the fruit center temperatures were less than or equal to 30 degrees C. Phytotoxicity tests showed that the HTFA treatment was not detrimental to fruit quality. Survival tests with the HTFA treatment until final fruit center temperatures were 43.2, 45.2, or 46.2 degrees C showed little or no survival between 46.2 and 47.2 degrees C for *C. capitata*, and between 45.2 and 46.2 degrees C for *D. cucurbitae* and *D. dorsalis*. *D. cucurbitae* was more susceptible to the HTFA treatment than *C. capitata* or *D. dorsalis*. Survival tests also showed that either first or third instars were more susceptible to the HTFA treatment than eggs for all three fruit fly species. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1667-1674. Includes references. (NAL Call No.: DNAL 421 J822).

0345

Hot water as a quarantine treatment for Florida mangos infested with Caribbean fruit fly. Sharp, J.L. Spalding, D.H. s.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. June 1985. v. 97. p. 355-357. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0346

Hot-water immersion appliance for quarantine research. JEENAI. Sharp, J.L. Lanham, Md. : Entomological Society of America. A hot-water immersion appliance (HWIA) was assembled and used as a research tool in the development of a hot-water immersion quarantine treatment to disinfest mangos in Haiti, Mexico, and Florida that were

infested with immature Tephritidae. The HWIA consists of a metal container (approximately 57.2 cm inside diameter and 85.1 cm height) adapted with a metal screen platform positioned inside the container 25.4 cm above the bottom. A submersible pump mounted to the bottom of the platform circulated 1,514-1,893 liters heated water per hour within the container through flexible polybutylene tubing. The water was heated by flames provided by a two-burner, propane gas, hot plate located below the container. The HWIA was easily assembled, durable, mobile, and inexpensive. Journal of economic entomology. Feb 1989. v. 82 (1). p. 189-192. Includes references. (NAL Call No.: DNAL 421 J822).

0347

Hot-water quarantine treatment for mangoes from Mexico infested with Mexican fruit fly and West Indian fruit fly (Diptera: Tephritidae). JEENAI. Sharp, J.L. Ouye, M.T.; Ingle, S.J.; Hart, W.G. Lanham, Md. : Entomological Society of America. Heated water was used in the development of a quarantine treatment to kill Mexican fruit fly, *Anastrepha ludens* (Loew), and West Indian fruit fly, *A. obliqua* (Macquart) infestations in mango, *Mangifera indica* L. Mangoes from Mexico were infested in the laboratory and immersed in water at 46.1 degrees C for 10-70 min to estimate time-mortality relationships. Probit analysis of the data estimated the immersion time needed to reach Probit 9 security for a laboratory strain of *A. ludens* as 65.1 min for mixed cultivars ('Haden', 'Tommy Atkins', 'Keitt', and 'Kent'). For a feral strain (wild) in 'Haden', the estimated immersion time was 71.4 min. The estimated immersion times for Probit 9 security for *A. obliqua* in 'Kent' were 66.8 min for a laboratory strain and 83.6 min for a wild strain. A large-scale test resulted in no survivors based on number of normal pupae when 187,114 *A. ludens* (laboratory) in 4,864 'Keitt' and 'Oro'; 226,054 *A. ludens* (wild) in 5,530 'Haden' and 'Tommy Atkins'; 116,869 *A. obliqua* (wild) in 7,703 'Kent'; and 101,049 *A. obliqua* (laboratory) in 8,775 'Keitt', 'Haden', and 'Tommy Atkins' were immersed in water at 46.1 degrees C for 90 min. The market quality of mangoes immersed in water at 46.1 degrees C depended on cultivar, size and shape, maturity, and handling procedures. 'Oro' mangoes immersed in water for 75 min were not damaged. The percentage of acceptable 'Oro' immersed for 90, 105, and 120 min was reduced to 80, 85, and 15%, respectively. 'Kent', 'Tommy Atkins', and 'Keitt' mangoes immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 7, 11, and 14 d were not damaged. 'Haden' mangoes immersed in water at 46.1 degrees C for 90 min, not refrigerated, and held at 23.9 +/- 1 degrees C. were acceptable for 12 d. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1657-1662. Includes references. (NAL Call No.: DNAL 421 J822).

0348

Hot-water quarantine treatment for mangoes from the state of Chiapas, Mexico, infested with Mediterranean fruit fly and *Anastrepha serpentina* (Wiedemann) (Diptera: Tephritidae). JEENAI. Sharp, J.L. Ouye, M.T.; Ingle, S.J.; Hart, W.G.; Enkerlin H., W.R.; Celedonio H., H.; Toledo A., J.; Stevens, L.; Quintero, E.; Reyes F., J.; Schwarz, A. Lanham, Md. : Entomological Society of America. Heated water was used in the development of a quarantine treatment to kill tephritid larval infestations in mango, *Mangifera indica* L., from the state of Chiapas, Mexico. Infested mangoes were immersed for 20-80 min in water at 45.9-47.1 degrees C for laboratory tests. Probit analysis of the data estimated immersion times needed to reach Probit 9 was 67.5 min for the Mediterranean fruit fly, *Ceratitidis capitata* (Wiedemann), and 64.5 min for *Anastrepha serpentina* (Wiedemann). Confirmatory tests resulted in no survivors when 138,443 *C. capitata* larvae in 13,797 infested mangoes and 111,031 *A. serpentina* larvae in 12,089 infested mangoes were immersed in water at 45.9-47.1 degrees C for 90 min. 'Ataulfo' mangoes immersed in water at 46.1 degrees C for 90 min were not damaged; however, none were acceptable after 7 d at 23.9 degrees C. Most mangoes (93.3%) were acceptable if immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 14 d, and 13.3% were acceptable after 7 d at 23-24 degrees C. Only 10% were acceptable if immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 21 d. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1663-1666. Includes references. (NAL Call No.: DNAL 421 J822).

0349

Hot-water treatment for control of *Anastrepha suspensa* (Diptera: Tephritidae) in mangos. JEENAI. Sharp, J.L. College Park, Md. : Entomological Society of America. Journal of economic entomology. June 1986. v. 79 (3). p. 706-708. Includes references. (NAL Call No.: DNAL 421 J822).

0350

Immersion of Florida mangos in hot water as a quarantine treatment for Caribbean fruit fly (Diptera: Tephritidae). JEENAI. Sharp, J.L. Ouye, M.T.; Hart, W.; Ingle, S.; Hallman, G.; Gould, W.; Chew, V. Lanham, Md. : Entomological Society of America. Heated water was tested as a quarantine treatment to destroy all instars of the Caribbean fruit fly, *Anastrepha suspensa* (Loew), in mangos, *Mangifera indica* L., from Florida. Infested 'Tommy Atkins' and 'Keitt' were immersed for 20-60 min in water at 46.1-46.7 degrees C. Probit analysis of the data estimated the immersion time required to reach 99.9968% mortality (Probit 9 security) as 60 and 60.5 min for 'Tommy Atkins' and 'Keitt', respectively. A large-scale test resulted in

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zero survivors based on the number of normal appearing pupae when 116,031 *A. suspensa* larvae in 3,828 infested 'Tommy Atkins,' 'Keitt,' 'Jubilee,' and 'Kent' were immersed in water at 46.1-46.7 degrees C for 90 min. *Journal of economic entomology*. Feb 1989. v. 82 (1). p. 186-188. Includes references. (NAL Call No.: DNAL 421 J822).

0351

Important insect pests of *Annona* spp. in Florida.

Pena, J.E. Glenn, H.; Baranowski, R.M. s.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. June 1985. v. 97. p. 337-340. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0352

Individual shrink wrapping: a technique for fruit fly disinfestation in tropical fruits. HJHSA. Shetty, K.K. Klowden, M.J.; Jang, E.B.; Kochan, W.J. Alexandria, Va. : American Society for Horticultural Science. *HortScience*. Apr 1989. v. 24 (2). p. 317-319. Includes references. (NAL Call No.: DNAL SB1.H6).

0353

Infection of (leafmining beetle) *Promecotheca papuana* with (the fungus) *Synnematum jonesii* (Biological control of coconut pests). Prior, C. Perry, C.H. New York, Academic Press. *Journal of invertebrate pathology*. Jan 1980. v. 35 (1). p. 14-19. ill. 6 ref. (NAL Call No.: 421 J826).

0354

The infectivity of *Metarhizium anisopliae* to two insect pests of coconuts.

JIVPA. Prior, C. Arura, M. New York, N.Y. : Academic Press. *Journal of invertebrate pathology*. Mar 1985. v. 45 (2). p. 187-194. Includes references. (NAL Call No.: DNAL 421 J826).

0355

Infestation of carambolas by laboratory-reared Caribbean fruit flies (Diptera: Tephritidae): effects of fruit ripeness and cultivar. JEENAI. Howard, D.F. Kenney, P. College Park, Md. : Entomological Society of America. *Journal of economic entomology*. Apr 1987. v. 80 (2). p. 407-410. Includes references. (NAL Call No.: DNAL 421 J822).

0356

Insect disinfestation of packed dates by gamma-radiation.

Ahmed, M.S.H. Hameed, A.A.; Kadhum, A.A.; Ali, S.R. Honolulu : Hawaii Institute of Tropical Agric. & Human Resources, Univ. of Hawaii, Manoa, 1985. Radiation disinfestation of food and agricultural products : proceedings of an international conference, Honolulu, Hawaii, November 14-18, 1983 / edited by James H. Moy. p. 374-380. Includes 10 references. (NAL Call No.: DNAL TP371.8.R284).

0357

Insect pests of the avocado and their control /D.O. Wolfenbarger.

Wolfenbarger, D. O. Gainesville, Fla. : University of Florida Agricultural Experiment Station, 1958. Cover title.- "A contribution from the Subtropical Experiment Station"-- T.p. 51 p. : ill. ; 23 cm. (NAL Call No.: DNAL 100 F66S (1) no.605).

0358

Insecticide evaluation for the control of *Carpophilus humeralis* F. in pineapple fields of Puerto Rico.

Gallardo-Covas, F. JAUPA. Ingles-Casanova, R. Rio Piedras : University of Puerto Rico, Agricultural Experiment Station. *The Journal of agriculture of the University of Puerto Rico*. Apr 1983. v. 67 (2). p. 174-175. Includes references. (NAL Call No.: 8 P832J).

0359

Insects injurious to the mango in Florida and how to combat them /by G.F. Moznette.

Moznette, G. F. 1890-. Washington, D.C. : U.S. Dept. of Agriculture, 1922. Cover title.- "Contribution from the Bureau of Entomology." 22 p. : ill., 1 map ; 23 cm. (NAL Call No.: DNAL 1 Ag84F no.1257).

0360

Insects injurious to the mango in Florida and how to combat them by G.F. Moznette . --.

Moznette, G. F. Washington, D.C. : U.S. Dept. of Agriculture, 1922. 22 p. : ill. --. (NAL Call No.: DNAL Fiche S-70 no.1257).

0361

Isolation, identification, and synthesis of male-produced sex pheromone of papaya fruit fly, *Toxotrypana curvicauda* Gerstaecker (Diptera: Tephritidae).

JCECD. Chuman, T. Landolt, P.J.; Heath, R.R.; Tumlinson, J.H. New York, N.Y. : Plenum Press. *Journal of chemical ecology*. Sept 1987. v. 13

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(9). p. 1979-1992. Includes references. (NAL Call No.: DNAL QD415.A1J6).

0362

Looper, amorbia pose threat to growers (Avocado pests, biological control, in southern California).

Toumey, J. Vista, Calif. : Rancher Pub. Avocado grower. May 1983. v. 7 (5). p. 16-19, 54. (NAL Call No.: SB379.A9A9).

0363

Loss in coconut yield due to *Oryctes rhinoceros* damage (in Western Samoa).

Zelazny, B. Rome. World Reporting Service on Plant Diseases and Pests, Food and Agriculture Organization of the United Nations. Plant protection bulletin. 1979. v. 27 (3). p. 65-70. ill. 11 ref. (NAL Call No.: 421 P692).

0364

Mangoes (*Mangifera indica* L.) susceptibility to *Aulacaspis tubercularis* Newstead (Homoptera: Diaspididae) in Puerto Rico (Resistant varieties, orchard pests, scale insects).

Gallardo-Covas, F. JAUPA. Rio Piedras : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1983. v. 67 (2). p. 179. (NAL Call No.: 8 P832J).

0365

Mealybug wilt, mealybugs, and ants on pineapple.

PLDIDE. Rohrbach, K.G. Beardsley, J.W.; German, T.L.; Reimer, N.J.; Sanford, W.G. St. Paul, Minn. : American Phytopathological Society. Plant disease. July 1988. v. 72 (7). p. 558-565. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0366

Methyl bromide fumigation as a quarantine treatment for latania scale, *Hemiberlesia lataniae* (Homoptera: Diaspididae) (Nursery stock, avocado fruit).

Withere11, P.C. Gainesville, Fla. : Florida Entomological Society. Florida entomologist. June 1984. v. 67 (2). p. 254-262. Includes references. (NAL Call No.: 420 F662).

0367

Microbial control of coconut leaf beetle (*Brontispa longissima*) with green muscardine fungus, *Metarhizium anisopliae* var. *anisopliae*. JIVPA. Liu, S.D. Lin, S.C.; Shiau, J.F. Duluth, Minn. : Academic Press. Journal of invertebrate pathology. May 1989. v. 53 (3). p. 307-314. ill. Includes references. (NAL Call No.: DNAL 421 J826).

0368

Novel system for monitoring and controlling the papaya fruit fly / P.J. Landolt, R.R. Heath and H.R. Agee .

Landolt, P. J. Heath, R. R.; Agee, Herndon R., 1933-. Washington, DC : Dept. of Agriculture, 1988. Cover title.- "6 Sep 88."- "Report nos.: PAT-APPL-7-240-312"--P. i. i, 18. 4 p. : ill. (NAL Call No.: DNAL aSB608.P23L3).

0369

Oriental fruit fly: ripening of fruit and its effect on index of infestation of Hawaiian papayas (*Dacus dorsalis*, *Carica papaya*).

Seo, S.T. Farias, G.J.; Harris, E.J. College Park, Md., Entomological Society of America. Journal of economic entomology. Apr 1982. v. 75 (2). p. 173-178. ill. 12 ref. (NAL Call No.: 421 J822).

0370

Packinghouses downgrade avocados damaged by thrips.

Bailey, J.B. Vista, Calif. : Rancher Pub. Avocado grower. Oct 1984. v. 8 (10). p. 28, 30, 32-33, 40. ill. (NAL Call No.: DNAL SB379.A9A9).

0371

Permethrin as a control for the papaya fruit fly (*Toxotrypana curvicauda*, Florida).

Conover, R.A. Waddill, V.H. S.1., The Society. Proceedings of the ... annual meeting of the Florida State Horticultural Society. 1981 (pub. 1982). v. 94. p. 353-355. Includes 5 ref. (NAL Call No.: 81 F66).

0372

Pesticide experiments for California avocado IPM (Integrated Pest Management) Program (Looper, *Sabulodes aegrotata*, western avocado leafroller, *Amorbia cuneana*, *Heliothrips haemorrhoidalis*).

Bailey, J.B. Hoffmann, M.P. Saticoy, Calif., The Society. Yearbook - California Avocado Society. 1980. v. 64. p. 107, 109, 111, 113-116, 118-122. 2 ref. (NAL Call No.: 81

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C128).

0373

Physiological responses of avocado leaves to avocado brown mite feeding injury (*Oligonychus punicae*).

Sances, F.V. Toscano, N.C.; Hoffmann, M.P.; LaPre, L.F.; Johnson, M.W.; Bailey, J.B. College Park, Md., Entomological Society of America. Environmental entomology. Apr 15, 1982. v. 11 (2). p. 516-518. ill. Ref. (NAL Call No.: QL461.E532).

0374

Possible new race of *Amorbia cuneana* discovered in avocado.

CAGRA. Bailey, J.B. Olsen, K.N.; McDonough, L.M.; Hoffmann, M.P. Berkeley, Calif. : The Station. California agriculture - California Agricultural Experiment Station. Sept/Oct 1988. v. 42 (5). p. 11-12. (NAL Call No.: DNAL 100 C12CAG).

0375

Predation of the Mediterranean fruit fly (Diptera: Tephritidae) by the Argentine ant (Hymenoptera: Formicidae) in Hawaii.

JEENAI. Wong, T.T.Y. McInnis, D.O.; Nishimoto, J.I.; Ota, A.K.; Chang, V.C.S. College Park, Md. : Entomological Society of America. Journal of economic entomology. Dec 1984. v. 77 (6). p. 1454-1458. ill. Includes references. (NAL Call No.: DNAL 421 J822).

0376

Presence of the baculovirus of *Oryctes rhinoceros* (Coconut pest, biological control, India).

Zelazny, B. Rome. World Reporting Service on Plant Diseases and Pests, FAO. Plant protection bulletin. 1981. v. 29 (3/4). p. 77-78. ill. 1 ref. (NAL Call No.: 421 P692).

0377

Previously imported parasite may control invading whitefly (*Tetraleurodes*, *Cales noacki*, avocados, biological control, California).

Rose, M. Woolley, J.B. Berkeley : The Station. California agriculture - California Agricultural Experiment Station. Mar/Apr 1984. v. 38 (3/4). California ill. (NAL Call No.: 100 C12CAG).

0378

Quarantine procedure for Hawaiian papaya using fruit selection and a two-stage hot-water immersion.

JEENAI. Couey, H.M. Hayes, C.F. College Park, Md. : Entomological Society of America. Journal of economic entomology. Oct 1986. v. 79 (5). p. 1307-1314. Includes references. (NAL Call No.: DNAL 421 J822).

0379

Quarantine system for Papaya.

Couey, H.M. Hayes, C.F. Washington, D.C. : The Department. Abstract: A novel system to ensure that papaya are free of fruit flies so as to meet quarantine restrictions is described. Papaya are subjected to selection on the basis of color in combination with a two-stage heated fluid treatment wherein time and temperature of the treatment are maintained within narrowly defined parameters. With this system, excellent fruit quality is maintained. The system is suitable for commercial use. United States Department of Agriculture patents. Copies of USDA patents are available for a fee from the Commissioner of Patents and Trademarks, U.S. Patents and Trademarks Office, Washington, D.C. 20231. Oct 21, 1986. (4,618,497). 1 p. Includes references. (NAL Call No.: DNAL aT223.V4A4).

0380

Radioactive measurement of brown mite injury on avocados (*Brown mite*, *Oligonychus punicae*).

Sances, F.V. Toscano, N.C.; Hoffmann, M.P.; LaPre, L.F.; Johnson, M.W.; Bailey, J.B. Berkeley, Calif., The Station. California agriculture - California Agricultural Experiment Station. May/June 1982. v. 36 (5/6). p. 22-23. ill. (NAL Call No.: 100 C12CAG).

0381

Radioactive study: researchers measure brown mite injury (*Oligonychus punicae*, in southern California avocado-growing areas).

Sances, F.V. Toscano, N.C.; Hoffmann, M.P.; LaPre, L.F.; Johnson, M.W.; Bailey, J.B. Vista, Calif. : Rancher Pub. Avocado grower. Sept 1982. v. 6 (9). p. 46-47. ill. (NAL Call No.: SB379.A9A9).

0382

Relationship of fruit ripeness to infestation in 'Sharwil' avocados by the Mediterranean fruit fly and the Oriental fruit fly (Diptera: Tephritidae).

JEENAI. Oi, D.H. Mau, R.F.L. Lanham, Md. : Entomological Society of America. Harvested and unharvested 'Sharwil' avocados, *Persea americana* Mill., were individually exposed to gravid females of Mediterranean fruit fly,

Ceratitidis capitata (Wiedemann), or Oriental fruit fly, *Dacus dorsalis* Hendel. Infestations of 0-30% were obtained from avocados exposed at 0-2 postharvest; infestations of 66.7-100% at 3-7 d postharvest. Percent infestations of 15.8 and 4.8% were obtained from unharvested avocados exposed to *C. capitata* and *D. dorsalis*, respectively. Mean puparial recoveries ranged from 0 to 4.8 puparia per exposed fruit from the unharvested avocados and avocados exposed at 0-2 d postharvest, and recoveries ranged from 7.7 to 135.5 from avocados exposed at 3-7 postharvest. The hard avocado skin seemed to provide a physical barrier which resulted in lower infestations of both fruit fly species in unharvested avocados, and in avocados that were within 3 d postharvest. *Journal of economic entomology*. Apr 1989. v. 82 (2). p. 556-560. ill. Includes references. (NAL Call No.: DNAL 421 J822).

0383

Research shows: nature begins to wipe out two major avocado pests (omnivorous looper, western avocado leaf roller, biological control). Vista, Calif., Rancher Publications. Avocado grower. July 1980. v. 4 (7). p. 26-28, 53. (NAL Call No.: SB379.A9A9).

0384

Resistance of pineapple variety '59-656' to field populations of oriental fruit flies and melon flies (Diptera: Tephritidae) (*Dacus cucurbitae*, *Dacus dorsalis*). Armstrong, J.W. JEENA. Vargas, R.I. College Park : Entomological Society of America. *Journal of economic entomology*. Oct 1982. v. 75 (5). p. 781-782. Includes references. (NAL Call No.: 421 J822).

0385

Resistance of 'Sharwil' avocados at harvest maturity to infestation by three fruit fly species (Diptera: Tephritidae) in Hawaii (*Ceratitidis capitata*, *Dacus cucurbitae*, *Dacus dorsalis*). Armstrong, J.W. Mitchell, W.C.; Farias, G.U. College Park, Md. : Entomological Society of America. *Journal of economic entomology*. Feb 1983. v. 76 (1). p. 119-121. Includes references. (NAL Call No.: 421 J822).

0386

A review of pest control in avocados. Gustafson, C.D. Saticoy, Calif., The Society. *Yearbook - California Avocado Society*. 1979. 1979. p. 58-60, 62-65. (NAL Call No.: 81 C128).

0387

Shelf-life and acceptability of hot water-treated mangos. JAUPA. Diaz, N. Rodriguez, T.; Coloni, I.B. de. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. *The Journal of agriculture of the University of Puerto Rico*. July 1988. v. 72 (3). p. 469-474. Includes references. (NAL Call No.: DNAL 8 P832J).

0388

Solar heating reduces insect infestations in ripening and drying figs. HUJSA. Shorey, H.H. Ferguson, L.; Wood, D.L. Alexandria, Va. : American Society for Horticultural Science. *HortScience*. June 1989. v. 24 (3). p. 443-445. Includes references. (NAL Call No.: DNAL SB1.H6).

0389

Structure and development of surface deformations on avocado fruits. HUJSA. Fisher, J.B. Davenport, T.L. Alexandria, Va. : American Society for Horticultural Science. *HortScience*. Oct 1989. v. 24 (5). p. 841-844. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

0390

A study of *Neoscona oaxacensis* (Araneae: Araneidae) in commercial avocado orchards in San Diego County, California (Control of insect pests). Pascoe, F.H. Saticoy, Calif., The Society. *Yearbook - California Avocado Society*. 1980. v. 64. p. 153-156, 158-186. ill. Bibliography p. 182-183. (NAL Call No.: 81 C128).

0391

Submersion of 'Francis' mango in hot water as a quarantine treatment for the West Indian fruit fly and the Caribbean fruit fly (Diptera: Tephritidae). JEENAI. Sharp, J.L. Ouye, M.T.; Thaiman, R.; Hart, W.; Ingle, S.; Chew, V. College Park, Md. : Entomological Society of America. Heated water was tested as a quarantine treatment to control infestations of 1- to 6-d-old larvae of the West Indian fruit fly, *Anastrepha obliqua* (Macquart), and the Caribbean fruit fly, *A. suspensa* (Loew), in mango, *Mangifera indica* L., 'Francis.' Submersion of infested fruit for 15-60 min at 46.1-46.7°C reduced the number of surviving pupae. Probit analysis of the data estimated submersion time needed to reach 99.9968% mortality (probit 9 security) as 58.0 and 44.3 min for *A. obliqua* and *A. suspensa*, respectively. A confirmatory test resulted in no survivors based on adult emergence when 147,993 *A. obliqua* larvae in 4,738 infested fruits were submerged in water at 46.1-46.7°C

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for 65 min, and no survivors when 102,509 *A. suspensa* larvae in 1,892 infested fruits were submerged in water at 46.1-46.7°C for 60 min. 'Francis' mangos submerged in water at 46.1-46.7°C for 75 min and then stored at 25-27°C for 8 d were not damaged. 'Francis' submerged in water at 46.1-46.7°C for 2 h and then refrigerated at 11.1°C for 7 d were not damaged. Percentage of acceptable mangos treated with hot water decreased as exposure time in water at 46.1-46.7°C increased to 4 h, when all mangos were damaged and were not acceptable following storage at 11.1°C for 7 d or more. *Journal of economic entomology*. Oct 1988. v. 81 (5). p. 1431-1436. Includes references. (NAL Call No.: DNAL 421 J822).

0392

Temperature control as an alternative to ethylene dibromide fumigation for the control of fruit flies (Diptera: Tephritidae) in papaya (*Dacus dorsalis*).

Hayes, C.F. Chingon, T.G.; Nitta, F.A.; Wang, W.U. College Park, Md. : Entomological Society of America. *Journal of economic entomology*. June 1984. v. 77 (3). p. 683-686. Includes references. (NAL Call No.: 421 J822).

0393

***Trichocereus* as a potential nursery crop in southern Arizona, with discussion of the *Opuntia* Borer (Cerambycidae: *Moneilema gigas*) as a serious threat to its cultivation.**

Crosswhite, C.D. Crosswhite, F.S. Superior : University of Arizona. *Desert plants*. 1986. v. 7 (4). p. 195-203. ill. Includes references. (NAL Call No.: DNAL OK938.D4D4).

0394

Use of fluvalinate for the protection of kiwifruit from contamination by twospotted spider mite (Acari: Tetranychidae).

JEENAI. Hern, M.D. Penman, D.R.; Chapman, R.B. College Park, Md. : Entomological Society of America. Abstract: Protection or disinfection of harvested kiwifruit, *Actinidia deliciosa* Planch., from contamination by diapausing twospotted spider mite, *Tetranychus urticae* Koch, was examined by treating fruit with sublethal doses of fluvalinate. Repellent or irritant activity was used to induce runoff. Tests on leaf disks of broad bean, *Vicia faba* L., showed that diapausing mites were more susceptible than nondiapausing forms to runoff when exposed to fluvalinate residues. Harvested fruit were dipped before infestation to simulate a protective treatment after harvest, or were dipped 24 h after infestation by nondiapausing mites to simulate treatment before harvest. Two rates of fluvalinate were tested (0.1 and 0.01 g AI /liter). Treatment before infestation reduced the proportion of subsequently infested fruit at the two rates by 19 and 26% after storage at 10 degrees C, and 29 and 49% at 20 degrees C. Dipping previously

colonized fruit reduced the proportion of infested fruit by 48 and 47% for the two rates at 10 degrees C, and 68 and 75% at 20 degrees C. Disinfestation between the two rates of fluvalinate did not differ significantly, but the effectiveness of treatments was increased at higher storage temperatures after treatment. The possibility of using low rates of pyrethroids for disinfection or protection of harvested crops from contamination by spidermites is discussed. *Journal of economic entomology*. June 1988. v. 81 (3). p. 863-866. Includes references. (NAL Call No.: DNAL 421 J822).

0395

Vulnerability of stressed palms to attack by *Rhynchophorus cruentatus* (Coleoptera: Curculionidae) and insecticidal control of the pest.

JEENAI. Giblin-Davis, R.M. Howard, F.W. Lanham, Md. : Entomological Society of America. One field study and two experiments were done to test whether palms must be stressed for successful infestation by *Rhynchophorus cruentatus* (F.). In the field study, 8% of 290 transplanted mature cabbage palmettos, *Sabal palmetto* (Walter), in a site in Broward County, Fla., became infested with immatures of *R. cruentatus* and died, compared with no infestations or mortality in a control group of 92 undisturbed palms after 140 d. In Experiment 1, 2-yr-old potted Canary Island date palms, *Phoenix canariensis* Hortorum ex Chabaud, were grown in a screened enclosure and either stressed by severe pruning or left unstressed. All palms were bagged with fine-meshed polyethylene netting and each was challenged with two male and two female *R. cruentatus*. Thirty-one percent of the 13 stressed palms were infested with immatures of *R. cruentatus* and died within 56 d compared with a 15% infestation and mortality level in 13 unstressed palms. In Experiment 2, fine-meshed polyethylene bags were used to confine 10 males and 10 females of *R. cruentatus* onto individual mature cabbage palmettos in the field that were either stressed by severing of the stem or unstressed. All of the three stressed palms were infested with *R. cruentatus*, compared with none of the five undisturbed palms within 84 to 112 d. These data suggest that *R. cruentatus* is a secondary invader of stressed or dying palms and not a threat to healthy palms. Propoxur (70% wettable powder WP, 21.0 g AI /liter); chlorpyrifos (50% WP, 1.2 g AI /liter); lindane (25% WP, 0.6 g AI /liter); dimethoate (0.49kg/liter emulsifiable concentrate EC, 1.2 g AI /liter) and methomyl (90% WP, 1.0 g AI /liter) killed *R. cruentatus* adults in a bioassay done with pineapple tops, although methomyl failed to produce 100% mortality after 168 h. The mean time to mortality for *R. cruentatus* was less than 24 h for chlorpyrifos, propoxur, and lindane and 42 h for dimethoate. Prophylactic insecticide treatment applied to palms before transp. *Journal of economic entomology*. Aug 1989. v. 82 (4). p. 1185-1190. Includes references. (NAL Call No.: DNAL 421 J822).

0396

Western avocado leafroller, *Amorbia cuneana* (Walsingham), (Lepidoptera: Tortricidae): Discovery of populations utilizing different ratios of sex pheromone components. JCECD. Bailey, J.B. McDonough, L.M.; Hoffmann, M.P. New York, N.Y. : Plenum Press. Journal of chemical ecology. June 1986. v. 12 (6). p. 1239-1245. Includes references. (NAL Call No.: DNAL QD415.A1J6).

0397

Evaluation of insecticides and application methods for controlling the banana corm weevil (*Cosmopolites sordidus* Germar). Spanish. JAUPA. Ingles, R. Rodriguez, J. Rio Piedras, R.R. : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1989. v. 73 (2). p. 97-107. Includes references. (NAL Call No.: DNAL 8 P832J).

PESTS OF PLANTS - NEMATODES

0398

Biochemical identification of the two races of *Radopholus similis* by polyacrylamide gel electrophoresis (Banana and citrus pests). Huettel, R.N. Dickson, D.W.; Kaplan, D.T. Ames, Iowa : Society of Nematologists. Journal of nematology. July 1983. v. 15 (3). p. 345-348. ill. Includes references. (NAL Call No.: QL391.N4J62).

0399

Biochemical identification of the two races of *Radopholus similis* by starch gel electrophoresis (Banana and citrus pests). Huettel, R.N. Dickson, D.W.; Kaplan, D.T. Ames, Iowa : Society of Nematologists. Journal of nematology. July 1983. v. 15 (3). p. 338-344. Includes references. (NAL Call No.: QL391.N4J62).

0400

Control of *Helicotylenchus multicinctus* parasitising bananas using systemic nematocides.

Jones, R.K. Gainesville, Fla., Organization of Tropical American Nematologists. Nematropica. Oct 1979. v. 9 (2). p. 147-150. ill. 7 ref. (NAL Call No.: SB998.N4N4).

0401

Control of nematodes on bananas, 1979 (Banana (*Musa* sp.), *Rotylenchus juvenis*, *Hoplolaimus* sp., *Helicotylenchus* sp., *Meloidogyne* sp.). Pathan, I.H. Jagirdar, H.A. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1980. v. 35. p. 168-169. (NAL Call No.: 464.9 AM31R).

0402

Control of spiral nematodes infesting bananas, 1980 (Banana (*Musa* AAA 'Dwarf Cavendish'), spiral nematode; *Helicotylenchus multicinctus*). Jones, R.K. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1981. v. 36. p. 189-190. (NAL Call No.: 464.9 AM31R).

0403

Effects of *Heterodera fici* on the growth of commercial fig seedlings in pots (*Ficus carica*).

Di Vito, M. Inserra, R.N. Ames, Iowa, Society of Nematologists. Journal of nematology. July 1982. v. 14 (3). p. 416-418. 9 ref. (NAL Call No.: QL391.N4J62).

0404

Effects of vesicular-arbuscular mycorrhizal fungi on infection of tamarillo (*Cyphomandra betacea*) by *Meloidogyne incognita* in fumigated soil.

PLDIDE. Cooper, K.M. Grandison, G.S. St. Paul, Minn. : American Phytopathological Society. Plant disease. Dec 1987. v. 71 (12). p. 1101-1106. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0405

The effects of yield on bananas from the control of spiral nematodes, trial 2, 1980 (Banana (*Musa* AAA 'Dwarf Cavendish' and 'Williams'), spiral nematodes; *Helicotylenchus multicinctus*).

Jones, R.K. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1981. v. 36. p. 190-191. (NAL Call No.: 464.9 AM31R).

0406

The effects on yield of bananas from the control of spiral nematodes, trial 1, 1980 (Banana (*Musa* AAA 'Dwarf Cavendish'), spiral nematode; *Helicotylenchus multicinctus*). Jones, R.K. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1981. v. 36. p. 190. (NAL Call No.: 464.9 AM31R).

0407

Insect pests of the avocado and their control /D.O. Wolfenbarger.

Wolfenbarger, D. O. Gainesville, Fla. : University of Florida Agricultural Experiment Station, 1958. Cover title. - "A contribution from the Subtropical Experiment Station" - T.p. 51 p. : ill. : 23 cm. (NAL Call No.: DNAL 100 F66S (1) no.605).

0408

Nematode and disease problems of pineapple.

PLDRA. Rohrbach, K.G. Apt, W.J. St. Paul, Minn. : American Phytopathological Society. Plant disease. Jan 1986. v. 70 (1). p. 81-87. ill. Includes 18 references. (NAL Call No.: DNAL 1.9 P69P).

0409

Nematode problems of the banana plant.

Wehant, E.J. Holdeman, Q.L. S.l. : The Society. Proceedings - Soil and Crop Science Society of Florida. Paper presented at a meeting held November 30, December 1-2, 1959, in Gainesville, Florida. 1959. v. 19. p. 435-422. ill. Includes references. (NAL Call

(PESTS OF PLANTS - NEMATODES)

No.: DNAL 56.9 S032).

0410

Nitrogen nutrition of the pineapple plant, *Ananas comosus* (L.) Merr., soil nitrogen status, and dynamics of the reniform nematode population, *Rotylenchulus reniformis* Linford and Oliveira, in relation to the form of nitrogen fertilizer, soil acidity, and fumigation / by Edward Jerome Englerth, Jr. -. Englerth, Edward Jerome, 1931-. 1969. Thesis (Ph.D.)--University of Hawaii. 1969. Photocopy. Ann Arbor, Mich. : University Microfilms, 1971. viii, 88 leaves ; 21 cm. Bibliography: leaves 84-88. (NAL Call No.: DISS 70-19,508).

0411

Occupational exposure to 1,3-dichloropropene (Telone II) in Hawaiian pineapple culture. AEHLA. Albrecht, W.N. Washington, D.C. : Heldref Publications. Archives of environmental health. Sept/Oct 1987. v. 42 (5). p. 286-291. Includes references. (NAL Call No.: DNAL RC963.A1A7).

0412

Papaya diseases and their control (Hawaii). Nishijima, W. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. July 1983. Presented at the 18th annual Hawaii Papaya Industry Association Conference, Honolulu, October, 1982. July 1983. (033). p. 74-78. (NAL Call No.: S481.R4).

0413

Pineapple nematode research in Hawaii: past, present, and future. JONEB. Caswell, E.P. Apt. W.J. Raleigh, N.C. : Society of Nematologists. Journal of nematology. Literature review. Apr 1989. v. 21 (2). p. 147-157. ill. Includes references. (NAL Call No.: DNAL QL391.N4U62).

0414

Progress in breeding for resistance to *Radopholus similis* on bananas (Honduras). Pinochet, J. Rowe, P.R. Gainesville, Fla., Organization of Tropical American Nematologists. Nematropica. Apr 1979. v. 9 (1). p. 76-78. ill. 3 ref. (NAL Call No.: SB998.N4N4).

0415

Effect of the nematicide-insecticide oxamyl applied to the soil and to the leaf axils of banana plants (*Phytonematodes*, Puerto Rico). Spanish. Robalino, G. Roman, J.; Cordero, M. Auburn, Ala. : Organization of Tropical American Nematologists. Nematropica. Dec 1983. v. 13 (2). p. 135-143. ill. Includes references. (NAL Call No.: SB998.N4N4).

0416

Effects of the nematicides Aldicarb, Aldoxycarb and DBCP on nematode control and yield of bananas. SPANISH. Figueroa, A. Gainesville, Fla., Organization of Tropical American Nematologists. Nematropica. Apr 1980. v. 10 (1). p. 15-20. 12 ref. (NAL Call No.: SB998.N4N4).

PLANT DISEASES - GENERAL

0417

Avocado diseases /by H.E. Stevens.
Stevens, H. E. 1880-. Gainesville, Fla. :
University of Florida Agricultural Experiment
Station, 1922. Cover title. 23 p. : ill. ; 23
cm. Includes bibliographical references. (NAL
Call No.: DNAL 100 F66S (1) no.161).

0418

Control of root (wilt) disease of coconut
(Cocos nucifera) with micronutrients, phenolic
compounds, and ascorbic acid (Cause of the
disease is unknown).
Dwivedi, R.S. Amma, S.K.; Mathew, C.; Ray, P.K.
St. Paul, Minn., American Phytopathological
Society. Plant disease. Sept 1980. v. 64 (9).
p. 843-844. 9 ref. (NAL Call No.: 1.9 P69P).

0419

Disease management strategies and the survival
of the banana industry.
APPYA. Stover, R.H. Palo Alto : Annual Reviews,
Inc. Annual review of phytopathology. 1986. v.
24. p. 83-91. Includes references. (NAL Call
No.: DNAL 464.8 AN72).

0420

Evaluation of a spray mixture for lethal
yellowing control (in coconut palms, Florida).
McCoy, R.E.PFSHA. Williams, D.S.; Portier, K.M.
Lake Alfred : The Society. Proceedings of the
... annual meeting - Florida State
Horticultural Society. 1982. v. 95. p. 258-259.
ill. Includes references. (NAL Call No.: 81
F66).

0421

Minimizing postharvest diseases of kiwifruit
(Methods for handling, storage, and
transportation, California).
Sommer, N.F.CAGRA. Fortlage, R.J.; Edwards,
D.C. Berkeley : The Station. California
agriculture - California Agricultural
Experiment Station. Jan/Feb 1983. v. 37 (1/2).
p. 16-18. ill. (NAL Call No.: 100 C12CAG).

0422

Problems and progress in banana disease
research.
Boston, Mass. : Dept. of Research, United Fruit
Company, 1958. Prepared for 50th anniversary
meetings, American Phytopathological Society.
ix, 36 p. : ill. ; 22 cm. Bibliography: p.
33-36. (NAL Call No.: DNAL SB608.B16P7).

0423

Trichocereus as a potential nursery crop in
southern Arizona, with discussion of the
Opuntia Borer (Cerambycidae: Moneilema gigas)
as a serious threat to its cultivation.
Crosswhite, C.D. Crosswhite, F.S. Superior :
University of Arizona. Desert plants. 1986. v.
7 (4). p. 195-203. ill. Includes references.
(NAL Call No.: DNAL QK938.D4D4).

PLANT DISEASES - FUNGAL

0424

Aseptic culture techniques for banana and plantain improvement (Black Sigatoka disease, breeding for disease resistance, tissue culture).

Krikorian, A.D. Cronauer, S.S. New York, N.Y. : New York Botanical Garden. Economic botany. July/Sept 1984. v. 38 (3). p. 322-331. ill. Includes 37 references. (NAL Call No.: 450 EC7).

0425

Avocado black streak.

CAVYA. Ohr, H.D. Murphy, M.K. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1985. v. 69. p. 97-100. (NAL Call No.: DNAL 81 C128).

0426

Avocado research: a progress report.

Bender, G. Fallbrook, Calif. : Rancher Publications. California grower. July 1988. 3b v. 12 (7). p. 21-22, 25. ill. (NAL Call No.: DNAL SB379.A9A9).

0427

Avocado root rot disease--probing approaches to its annihilation.

Pinchas, Y. Fallbrook, Calif. : Rancher Publications. California grower. May 1988. v. 12 (5). p. 14-15, 27. (NAL Call No.: DNAL SB379.A9A9).

0428

Avocado stem injection of fosetyl-ai for control of Phytophthora root rot.

McMillan, R.T. Jr. Tepper, B. s.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. 1986. v. 98. p. 143-144. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0429

Avocado tree called Barr Duke.

Coffey, M.D. Guillemet, F.B. Washington, D.C. : The Office. A new and distinct rootstock variety of avocado tree characterized by its high yield resistance to Phytophthora root rot caused by Phytophthora cinnamomi. This variety has a high level of resistance comparable to the 'Duke 7' rootstock variety. It is also characterized under some field conditions by producing a somewhat smaller tree, when grafted with a 'Haas' scion, than that typical of a 'Duke 7' rootstock. Plant patent - United States Patent and Trademark Office. Feb 21, 1989. (6627). 1 p. plates. (NAL Call No.: DNAL 156.65 P69).

0430

Avocado tree called Thomas.

Coffey, M.D. Guillemet, F.B. Washington, D.C. : The Office. A new and distinct rootstock variety of avocado tree characterized by its high field resistance to Phytophthora root rot caused by Phytophthora cinnamomi. This variety has the highest level of resistance of any rootstock currently identified. It is characterized by relative ease of propagation using the etiolation method and graft compatibility with commercial scion varieties, including 'Hass', 'Gwen', 'Pinkerton', 'Fuerte', 'Bacon' and 'Zutano'. Plant patent - United States Patent and Trademark Office. Feb 21, 1989. (6628). 2 p. plates. (NAL Call No.: DNAL 156.65 P69).

0431

Biological control of phytophthora root rot of papaya with virgin soil (Carica papaya).

Ko, W.H. St. Paul, Minn. : American Phytopathological Society. Plant disease. June 1982. v. 66 (6). p. 446-448. ill. Includes 8 ref. (NAL Call No.: 1.9 P69P).

0432

Blossom end defects and fruit fly infestation in papayas following hot water quarantine treatment.

HJHSA. Zee, F.T. Nishina, M.S.; Chan, H.T. Jr.; Nishijima, K.A. Alexandria, Va. : American Society for Horticultural Science. HortScience. Apr 1989. v. 24 (2). p. 323-325. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

0433

California avocado diseases.

Bekey, R. Fallbrook, Calif. : Rancher Publications. California grower. July 1987. v. 11 (7). p. 18-21. ill. (NAL Call No.: DNAL SB379.A9A9).

0434

Can interplanting citrus control Phytophthora cinnamomi disease? (California avocado).

Borst, G. Vista, Calif. : Rancher Pub. Avocado grower. Apr 1982. v. 6 (4). p. 27-28. ill. Includes references. (NAL Call No.: SB379.A9A9).

0435

Chemical control of Phytophthora cinnamomi on avocado rootstocks.

Goffey, M.D. Ohr, H.D.; Campbell, S.D.; Guillemet, F.B. St. Paul, Minn. : American Phytopathological Society. Plant disease. Nov 1984. v. 68 (11). p. 956-958. Includes 12

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references. (NAL Call No.: 1.9 P69P).

0436

Colony revival, and notes on rearing and life history of the big-headed ant.

PHESA. Chang, V.C.S. Honolulu : The Society. Proceedings of the Hawaiian Entomological Society. Mar 1, 1985. v. 25. p. 53-58. ill. Includes references. (NAL Call No.: DNAL 420 H312).

0437

Comparison of hot-water spray and immersion treatments for control of postharvest decay of papaya (Stem-end rots and anthracnose).

Couey, H.M. Alvarez, A.M.; Nelson, M.G. St. Paul, Minn. : American Phytopathological Society. Plant disease. May 1984. v. 68 (5). p. 429-435. Includes references. (NAL Call No.: 1.9 P69P).

0438

Control of anthracnose of papaya fruit, 1980 (Papaya (*Carica papaya*), anthracnose; *Colletotrichum gloeosporioides*).

Conover, R.A. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1982. v. 37. p. 56-57. (NAL Call No.: 464.9 AM31R).

0439

Control of avocado root rot by trunk injection with phosethyl-A1 (*Phytophthora cinnamomi*, aluminum content of the treated trees, phytotoxicity, South Africa).

Darvas, J.M. Toerien, J.C.; Milne, D.L. St. Paul, Minn. : American Phytopathological Society. Plant disease. Aug 1984. v. 68 (8). p. 691-693. ill. Includes 14 references. (NAL Call No.: 1.9 P69P).

0440

Control of banana leaf spot, 1979 (Banana (*Musa* sp.), leaf spot; *Alternaria alternata*).

Jagirdar, H.A. Pathan, I.H. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1980. v. 35. p. 168. (NAL Call No.: 464.9 AM31R).

0441

Control of black rot of pineapples in transit /by C.O. Bratley and A.S. Mason.

Bratley, C. O. 1903-1948. Mason, A. S. 1890-. Washington, D.C. : U.S. Dept. of Agriculture, 1939. Caption title. 12 p. : ill. ; 23 cm. (NAL Call No.: DNAL 1 Ag84C no.511).

0442

Control of damping off and root rot of seedling papayas, 1981 (Papaya (*Carica papaya*), damping off and root rot, *Phytophthora* sp.).

Conover, R.A. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1982. v. 37. p. 57. (NAL Call No.: 464.9 AM31R).

0443

The control of dothiorella rot on avocado fruits /W.T. Horne and D.F. Palmer.

Horne, W. T. 1876-. Palmer, D. F. 1899-. Berkeley, Cal. : Agricultural Experiment Station, 1935. Cover title. ~ "Paper No. 320, University of California Citrus Experiment Station and Graduate School of Tropical Agriculture, Riverside, California.". 16 p. : ill. ; 24 cm. (NAL Call No.: DNAL 100 C12S no.594).

0444

Control of mango anthracnose with foliar sprays.

McMillan, R.T. Jr. s.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. June 1985. v. 97. p. 344-345. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0445

Control of mango powdery mildew with triforine (*Didium* sp., *Mangifera indica*).

McMillan, R.T. Jr. PFSHA. Lake Alfred : The Society. Proceedings of the ... annual meeting - Florida State Horticultural Society. 1982. v. 95. p. 122-124. Includes references. (NAL Call No.: 81 F66).

0446

Control of *Phytophthora palmivora* in papaya orchards with weekly sprays of chlorothalonil (Fungi, Hawaii).

Alvarez, A.M. Nelson, M.G. St. Paul, Minn., American Phytopathological Society. Plant disease. Jan 1982. v. 66 (1). p. 37-39. (NAL Call No.: 1.9 P69P).

0447

Control of pineapple disease of sugarcane with propiconazole.

PLDRA. Comstock, J.C. Ferreira, S.A.; Ching, S.A.; Hilton, H.W. St. Paul, Minn. : American Phytopathological Society. Plant disease. Dec 1984. v. 68 (12). p. 1072-1075. Includes 4 references. (NAL Call No.: DNAL 1.9 P69P).

0448

Control of pineapple heart rot, caused by *Phytophthora parasitica* and *Phytophthora cinnamomi*, with metalaxyl, fosetyl A1, and phosphorous acid.

PLDRA. Rohrbach, K.G. Schenck, S. St. Paul, Minn. : American Phytopathological Society. Plant disease. Apr 1985. v. 69 (4). p. 320-323. Includes 11 references. (NAL Call No.: DNAL 1.9 P69P).

0449

Control of postharvest (fungal) decay of papaya.

Couey, H.M. AR-W. Farias, G. Alexandria, Va., American Society for Horticultural Science. HortScience. Dec 1979. v. 14 (6). p. 719-721. ill. 5 ref. (NAL Call No.: SB1.H6).

0450

Detached root inoculation--a new method to evaluate resistance to *Phytophthora* root rot in avocado trees.

PHYTAJ. Zilberstein, M. Pinkas, Y. St. Paul, Minn. : American Phytopathological Society. Phytopathology. June 1987. v. 77 (6). p. 841-844. Includes references. (NAL Call No.: DNAL 464.8 P56).

0451

Diallel analysis of root rot resistance in papaya (*Phytophthora palmivora*, Hawaii).

Mosqueda-Vazquez, R. Nakasone, H.Y. Alexandria, Va., American Society for Horticultural Science. HortScience. June 1982. v. 17 (3). p. 384-385. 6 ref. (NAL Call No.: SB1.H6).

0452

Effect of morphactin on the storage behaviour of guava fruits (Postharvest decay control, *Gloeosporium psidii*, *Pestalotia psidii*).

Gupta, V.K. Mukherjee, D. Mount Vernon, Va., The Society. Journal of the American Society for Horticultural Science. American Society for Horticultural Science. Jan 1980. v. 105 (1). p. 115-119. ill. 33 ref. (NAL Call No.: 81 S012).

0453

Effect of postharvest treatments on *Stemphylium* rot of papaya (*Stemphylium lycopersici*).

Glazener, J.A. Couey, H.M. St. Paul, Minn. : American Phytopathological Society. Plant disease. Nov 1984. v. 68 (11). p. 986-988. Includes 8 references. (NAL Call No.: 1.9 P69P).

0454

The effect of temperature on growth and pathogenesis of *Phytophthora cinnamomi* and on growth of its avocado host.

Zentmyer, G.A. St. Paul, Minn. : American Phytopathological Society. Phytopathology. Sept 1981. v. 71 (9). p. 925-928. ill. 14 ref. (NAL Call No.: 464.8 P56).

0455

Effect of wilt disease and age on the strength properties of coconut palm stem wood.

WOSTBE. Gnanaharan, R. Dhamodaran, T.K. Secaucus, N.J. : Springer-Verlag. Wood science and technology. 1989. v. 23 (3). p. 205-209. Includes references. (NAL Call No.: DNAL SD433.A1W6).

0456

Effects of flooding and *phytophthora* root rot on net gas exchange and growth of avocado.

PHYTAJ. Ploetz, R.R. Schnaffer, B. St. Paul, Minn. : American Phytopathological Society. Greenhouse studies were conducted to determine the effects of *Phytophthora* root rot (caused by *Phytophthora cinnamomi*) and flooding on avocado (*Persea americana*). In addition to standard disease assessments (root necrosis, root colonization, wilt, and defoliation), dry weight accumulations and gas exchange characteristics were monitored as indicators of host distress. In a peat-perlite potting medium with a high water-holding capacity, net CO₂ assimilation, transpiration, stomatal conductance for CO₂, and root and shoot dry weights were reduced by root rot (P less than 0.05). In this medium, flooding alone generally did not reduce these parameters after 5 days. In a calcareous soil used for avocado production in south Florida (with a lower water-holding capacity than the potting medium), root rot reduced assimilation, transpiration, and conductance in a series of three experiments, although not consistently. In this soil, flooding alone reduced these parameter as well. After 4 wk of flooding, assimilation, transpiration, and conductance declined to nondetectable levels. However, when plants with root rot were flooded, these physiological parameters were reduced as soon as 3 days after flooding began, and they declined to nondetectable levels within 1 wk. These plants also had reduced root, shoot, and total plant dry weight accumulations and increased defoliation when compared with

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nonflooded plants without root rot. Although similar reductions occurred for nonflooded plants with root rot and flooded plants without root rot, these reductions were not as great or consistent as those detected for the combined root rot and flooding treatment. In combination, *Phytophthora* root rot and flooding dramatically impaired photosynthesis and normal stomatal function and reduced the root and shoot biomass in avocado. *Phytopathology*. Feb 1989. v. 79 (2). p. 204-208. Includes references. (NAL Call No.: DNAL 464.8 P56).

0457

Effects of flooding and *Phytophthora* root rot on photosynthetic characteristics of avocado. Ploetz, R.C. Schaffer, B. S.I. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. Aug 1988. v. 100. p. 290-294. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0458

Effects of organophosphorous pesticides on cutinase activity and infection of papayas by *Colletotrichum gloeosporioides* (*Carcia papaya*). Dickman, M.B. PHYTA. Patil, S.S.; Kolattukudy, P.E. St. Paul : American Phytopathological Society. *Phytopathology*. Aug 1983. v. 73 (8). p. 1209-1214. Includes references. (NAL Call No.: 464.8 P56).

0459

Effects of temperature, moisture, and stage of inflorescence development on infection of pineapple by *Penicillium funiculosum* and *Fusarium moniliforme* var. *subglutinans*. Rohrbach, K.G. Taniguchi, G. St. Paul, Minn. : American Phytopathological Society. *Phytopathology*. Aug 1984. v. 74 (8). p. 995-1000. ill. Includes 14 references. (NAL Call No.: 464.8 P56).

0460

Evaluation and induction of resistance to blue mold in tobacco genotypes differing in contents of duvatrienediols.

PHYTAU. Rao, M.N. Siegel, M.R.; Nielson, M.T.; Wigglesworth, M.D.; Burton, H.R.; Kuc, J. St. Paul, Minn. : American Phytopathological Society. The alpha- and beta-4,8,13-duvatriene-1,3-diols (DVT) are fungitoxic leaf-surface components of tobacco. Tobacco Introductions (TI), double haploid breeding lines, and cultivar Ky 14, with different DVT contents, were evaluated for resistance to blue mold caused by *Peronospora tabacina* Adam. DVT contents varied significantly in plants grown at different times of the year and increased with age. TI 1068 and the double haploid breeding lines, DH 944-1, DH 909-2, and DH-960, had higher DVT

contents than Ky 14 and were more resistant to blue mold than Ky 14. However, although DH 909-2 was the most resistant genotype in greenhouse tests, it did not have the highest DVT contents. TI 1406, with lower contents of DVT than Ky 14, was somewhat more susceptible in greenhouse tests and considerably more susceptible in field tests. TI 1112, however, with little or no DVT, was highly resistant in greenhouse and field tests. In greenhouse tests, systemic resistance was induced in all types of tobacco by stem injection with sporangiospores of *P. tabacina*, except in TI 1112, which already was highly resistant. DVT contents did not significantly change in stem-injected plants. Removal of DVT by acetone dipping increased susceptibility to blue mold in the early stages of growth, but not in the later stages of field-grown tobacco, which contained DVT. For all genotypes, the oldest plants sampled in the field test (83 days after transplanting) appeared immune. Linear correlations of disease with DVT for individual sampling dates indicated no significant effect of variation in DVT contents among genotypes on disease severity. The disease resistance-DVT relationship is very complex. DVT contents were apparently not responsible for induced resistance or the high resistance of plants sampled late in the season (83 days after transplanting). DVT contents are not the only factors determining resistance to blue mold; however, they may have a contributory role. *Phytopathology*. Mar 1989. v. 79 (3). p. 271-275. Includes references. (NAL Call No.: DNAL 464.8 P56).

0461

Evaluation of a strain of *Myrothecium roridum* as a Potential biocontrol agent against *Phytophthora cinnamomi*.

PHYTA. Gees, R. Coffey, M.D. St. Paul, Minn. : American Phytopathological Society. Potential antagonists of *Phytophthora cinnamomi* were evaluated from among 36 fungi and 110 bacteria isolated from the rhizosphere of avocado roots growing in a soil suppressive to *Phytophthora* where *P. cinnamomi* had been present for 40-50 yr. Strain TW of *Myrothecium roridum* proved to be the most active antagonist in controlling *P. cinnamomi* in repeated greenhouse pot tests with highly susceptible seedlings of *Persea indica* inoculated with *P. cinnamomi*. *M. roridum* was grown on a wheat-bran medium and introduced into a peat-perlite mixture at 2.5% (w/v) 2 wk before inoculation with *P. cinnamomi*. In a UC-mixture with *P. indica* inoculated with zoospores of *P. cinnamomi*, *M. roridum* suppressed root infection by 50-94% compared with uninoculated controls. In the same experiments there was no significant difference in the level of control achieved by either *M. roridum* or the fungicide potassium phosphonate (2.5 mg/pot). In three naturally infested field soils, root infection ranged from 12 to 54% in the presence of *M. roridum*, compared with 58 to 93% for controls over the same 4-wk period. On a selective medium containing carbendazim, a fungicide-resistant mutant of strain TW, TWm14, was isolated consistently from the root tips of *P. indica* growing in infested soil 4 wk after

transfer, demonstrating the apparent rhizosphere competence of this strain in all three soils. *Phytopathology*. Oct 1989. v. 79 (10). p. 1079-1084. Includes references. (NAL Call No.: DNAL 464.8 P56).

0462

Evaluation of fungicides for control of anthracnose in avocados, 1982 (*Glomerella cingulata* var. *minor* infecting *Persea americana*). Fitzell, R.D.FNETD. Peak, C.M.; Peasley, D. (s.l.) : The Society. Fungicide and nematicide tests : results - American Phytopathological Society. 1983. v. 38. p. 202-203. (NAL Call No.: 464.9 AM31R).

0463

Exploitation of animal mobility. NATUAS. Moore, P.D. Neptune, N.J. : Macmillan Journals. *Nature*. Sept 26/Oct 2, 1985. v. 317 (6035). p. 288. ill. Includes references. (NAL Call No.: DNAL 472 N21).

0464

Field evaluations of top cop for papaya disease control, 1980 (Papaya (*Carica papaya* L 'Kapoho solo'), anthracnose; *Colletotrichum gloeosporioides*, black spot; *Cercospora papayae*, *Phytophthora* fruit rot; *Phytophthora palmivora*). Alvarez, A.M. Nelson, M.G. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1981. v. 36. p. 49. (NAL Call No.: 464.9 AM31R).

0465

Fungicides for control of avocado root rot (*Phytophthora cinnamomi*). Zentmyer, G.A. Vista, Calif. : Rancher Pub. Avocado grower. Sept 1982. v. 6 (9). p. 44-45. (NAL Call No.: SB379.A9A9).

0466

Injection of established avocado trees for the effective control of *Phytophthora* root rot. Darvas, J.M. Torien, J.C.; Milne, D.L. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1983. v. 67. p. 141-146. Includes references. (NAL Call No.: 81 C128).

0467

An integrated approach to the control of avocado root rot. CAVYA. Coffey, M. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1984. v. 68. p. 61-65, 67-68. ill. (NAL Call No.: DNAL 81 C128).

0468

Integrated control of avocado root rot. Kotze, J.M. Darvas, J.M. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1983. v. 67. p. 33-86. Includes references. (NAL Call No.: 81 C128).

0469

Interplanting: is it worth the headaches? (Citrus and avocados, *Phytophthora cinnamomi*, cultural control). Vista, Calif., Rancher Publications. Avocado grower. Nov 1980. v. 4 (11). p. 26-27. ill. (NAL Call No.: SB379.A9A9).

0470

Laboratory screening technique for assessing resistance of four avocado rootstocks to *Phytophthora cinnamomi*. PLDRA. Dolan, T.E. Coffey, M.D. St. Paul, Minn. : American Phytopathological Society. Plant disease. Feb 1986. v. 70 (2). p. 115-118. Includes 13 references. (NAL Call No.: DNAL 1.9 P69P).

0471

Net gas exchange as a damage indicator for *Phytophthora* root rot of flooded and nonflooded avocado. HUJSA. Schnaffer, B. Ploetz, R.C. Alexandria, Va. : American Society for Horticultural Science. *HortScience*. Aug 1989. v. 24 (4). p. 653-655. Includes references. (NAL Call No.: DNAL SB1.H6).

0472

Occurrence of free and conjugated 12,13-epoxytrichothecenes and zearalenone in banana fruits infected with *Fusarium moniliforme*. APMBA. Chakrabarti, D.K. Ghosal, S. Washington, D.C. : American Society for Microbiology. Applied and environmental microbiology. Jan 1986. v. 51 (1). p. 217-219. ill. Includes 15 references. (NAL Call No.: DNAL 448.3 AP5).

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0473

Organic matter helps control root rot spread (Phytophthora cinnamomi, avocado).
Borst, G. Vista, Calif. : Rancher Pub. Avocado grower. Dec 1983. v. 7 (12). p. 38-39, 47. ill. Includes references. (NAL Call No.: SB379.A9A9).

0474

Papaya diseases and their control (Hawaii).
Nishijima, W. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. July 1983. Presented at the 18th annual Hawaii Papaya Industry Association Conference, Honolulu, October, 1982. July 1983. (033). p. 74-78. (NAL Call No.: S481.R4).

0475

Phytophthora root rot of avocado.
Coffey, M. Vista, Calif. : Rancher Pub. Avocado grower. Aug 1984. v. 8 (7). p. 19-25. ill. (NAL Call No.: DNAL SB379.A9A9).

0476

Phytophthora root rot of avocado: an integrated approach to control in California.
PLDIDE. Coffey, M.D. St. Paul, Minn. : American Phytopathological Society. Plant disease. Nov 1987. v. 71 (11). p. 1046-1052. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0477

Post harvest disease control at the farm level (Fungicide sprays, sanitation, injury reduction, Hawaii).
Nishijima, W.T. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. Oct 1982. Presented at the 17th Annual Hawaii Papaya Industry Association Conference. September, 1981. Oct 1982. (020). p. 33-35. (NAL Call No.: S481.R4).

0478

Postharvest disease control of papaya (Fungicidal spray).
Alvarez, A. Nelson, M. Honolulu. The Institute. Research extension series - University of Hawaii, Hawaii Institute of Tropical Agriculture and Human Resources. May 1981. May 1981. (006). p. 21-26. (NAL Call No.: S481.R4).

0479

Progress of research on root rot reviewed (Use of nonphytotoxic soil fungicides to control Phytophthora cinnamomi, for avocados in California).
Vista, Calif. : Rancher Pub. Avocado grower. Aug 1983. v. 7 (8). p. 40-41. ill. (NAL Call No.: SB379.A9A9).

0480

Resistance of mango pathogens to fungicides used to control postharvest diseases.
PLDRA. Spalding, D.H. St. Paul, Minn. : American Phytopathological Society. Plant disease. Dec 1982. v. 66 (12). p. 1185-1186. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0481

Resistant rootstocks for control of Phytophthora cinnamomi (Root rot of avocado).
Zentmyer, G.A. Vista, Calif. : Rancher Pub. Avocado grower. Nov 1982. v. 6 (11). p. 32-35. (NAL Call No.: SB379.A9A9).

0482

Root rot control: integrated approach best path.
Thompson, W. Vista, Calif. : Rancher Pub. Avocado grower. June 1984. v. 8 (6). p. 23, 26-27. (NAL Call No.: DNAL SB379.A9A9).

0483

Screening of Carica papaya L. seedlings for resistance to root rot caused by Phytophthora palmivora Butl. (Breeding for disease resistance).
Mosqueda-Vazquez, R. Aragaki, M.; Nakasone, H.Y. Alexandria, Va., The Society. Journal of the American Society for Horticultural Science. July 1981. v. 106 (4). p. 484-487. 13 ref. (NAL Call No.: 81 S012).

0484

Selecting avocado rootstocks for specific conditions.
Ben Yaccov, A. Fallbrook, Calif. : Rancher Publications. California grower. May 1988. v. 12 (5). p. 14. (NAL Call No.: DNAL SB379.A9A9).

0485

Soil fumigants for root rot control (Phytophthora cinnamomi, in avocado groves). Zentmyer, G.A. Vista, Calif. : Rancher Pub. Avocado grower. Oct 1982. v. 6 (10). p. 40-41. (NAL Call No.: SB379.A9A9).

0486

Soil is said to influence biological control efforts (on root rot, caused by Phytophthora cinnamomi in avocados). Borst, G. Vista, Calif. : Rancher Pub. Avocado grower. Aug 1983. v. 7 (8). p. 34-35. Includes references. (NAL Call No.: SB379.A9A9).

0487

Suppression of germination, hyphal growth and sporulation of anthracnose fungi with fungicides, 1979 (Mango (Mangifera indica L.), anthracnose; Colletotrichum gloeosporioides var minor, Colletotrichum acutatum). Fitzell, R.D. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1981. v. 36. p. 48. (NAL Call No.: 464.9 AM31R).

0488

Systemic translocation of ¹⁴C (carbon isotope)-labeled metalaxyl (fungicide) in tomato, avocado, and Persea indica. Zaki, A.I. Zentmyer, G.A.; LeBaron, H.M. Laramie, The Station. Science monograph - University of Wyoming, Agricultural Experiment Station. May 1981. v. 71 (5). p. 509-514. ill. 13 ref. (NAL Call No.: S131.E2).

0489

Terrazole (fungicide, Phytophthora cinnamomi) gets mixed reception from Fallbrook Avocado Growers. Vista, Calif., Rancher Publications. Avocado grower. June 1980. v. 4 (6). p. 18-20. (NAL Call No.: SB379.A9A9).

0490

Thiabendazole to control post-harvest decay on papayas. Couey, H.M. HI-AR-W. Farias, G. Honolulu, The Service. Miscellaneous publication - Hawaii University. Cooperative Extension Service. Apr 1980. Apr 1980. (178). p. 17-19. 5 ref. (NAL Call No.: S544.3.H3H3).

0491

The use of antioxidants to delay the onset of anthracnose and stem end decay in avocado fruits after harvest. PLDIDE. Prusky, D. St. Paul, Minn. : American Phytopathological Society. Plant disease. May 1988. v. 72 (5). p. 381-384. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

PLANT DISEASES - BACTERIAL

0492

Bacterial decomposition of olives during pickling /by W.V. Cruess and E.H. Guthier. Cruess, W. V. 1886-. Guthier, E. H. 1895-. Berkeley, Cal. : Agricultural Experiment Station, 1923. Cover title. 15 p. : ill., 1 chart ; 24 cm. (NAL Call No.: DNAL 100 C12S (1) no.368).

0493

Effects of lethal yellowing on the composition of the phloem sap from coconut palms in Jamaica (*Cocos nucifera*, possible mycoplasma-like causal agent). Stemmer, W.P.C. Archer, D.B.; Daniels, M.J.; Davies, A.M.C.; Eden-Green, S.J. St. Paul, American Phytopathological Society. Phytopathology. June 1982. v. 72 (6). p. 672-675. 30 ref. (NAL Call No.: 464.8 P56).

0494

Epidemiology and control of bacterial canker of papaya caused by an *Erwinia* sp. on St. Croix, U.S. Virgin Islands. PLDRA. Webb, R.R. St. Paul, Minn. : American Phytopathological Society. Plant disease. Apr 1985. v. 69 (4). p. 305-309. ill. Includes 12 references. (NAL Call No.: DNAL 1.9 P69P).

PLANT DISEASES - VIRAL

0495

California avocado diseases.

Bekey, R. Fallbrook, Calif. : Rancher Publications. California grower. July 1987. v. 11 (7). p. 18-21. ill. (NAL Call No.: DNAL SB379.A9A9).

0496

'Cariflora'--a papaya ringspot virus-tolerant papaya for south Florida and the Caribbean.

HJHSA. Conover, R.A. Litz, R.E.; Malo, S.E. Alexandria, Va. : American Society for Horticultural Science. HortScience. Aug 1986. v. 21 (4). p. 1072. ill. Includes references. (NAL Call No.: DNAL SB1.H6).

0497

Cariflora, a papaya for south Florida with tolerance to papaya ringspot virus.

Conover, R.A. Litz, R.E.; Malo, S.E. Gainesville : The Institute. Circular S - Florida Agricultural Experiment Stations, Institute of Food and Agricultural Sciences, University of Florida. May 1986. (329). 4 p. ill. (NAL Call No.: DNAL 100 F66CI).

0498

Coconut cadang-cadang viroid.

Randles, J.W. Orlando, Fla. : Academic Press. 1985. Subviral pathogens of plants and animals : viroids and prions / edited by Karl Maramorosch, John J. McKelvey. p. 39-74. ill. Includes references. (NAL Call No.: DNAL QR500.S83).

0499

Control of papaya ringspot virus by cross protection.

PLDIDE. Yeh, S.D. Gonsalves, D.; Wang, H.L.; Namba, R.; Chiu, R.J. St. Paul, Minn. : American Phytopathological Society. Plant disease. May 1988. v. 72 (5). p. 375-380. ill Includes references. (NAL Call No.: DNAL 1.9 P69P).

0500

Current status of breeding for papaya virus resistance.

Nakasone, H.Y. HI. Honolulu, The Service. Miscellaneous publication - Hawaii University. Cooperative Extension Service. Apr 1980. Apr 1980. (178). p. 12. (NAL Call No.: S544.3.H3H3).

0501

Effect of mixtures of custard-apple oil and neem oil on survival of *Nephotettix virescens* (Homoptera: Cicadellidae) and on rice tungro virus transmission (*Annona squamosa*, *Azadirachta indica*).

Mariappan, V. Saxena, R.C. College Park, Md. : Entomological Society of America. Journal of economic entomology. Apr 1984. v. 77 (2). p. 519-521. Includes references. (NAL Call No.: 421 J822).

0502

Effect of nonedible seed oils on survival of *Nephotettix virescens* (Homoptera: Cicadellidae) and on transmission of rice tungro virus.

JEENAI. Mariappan, V. Jayaraj, S.; Saxena, R.C. College Park, Md. : Entomological Society of America. In a greenhouse study, nonedible oils extracted from seeds of "karanj," *Pongamia pinnata* Pierre; "mahua," *Madhuca longifolia* Koen. Macbr. var. *latifolia* Roxb. Cheval; and "pinnai," *Calophyllum inophyllum* L., trees were more effective than the oil of neem, *Azadirachta indica* A. Juss, in reducing the survival of the rice green leafhopper, *Nephotettix virescens* (Distant), and its transmission of the rice tungro viruses (RTV), and as effective as oil of custard-apple, *Annona squamosa* L. Insect mortality was 100% after 4 d on rice plants sprayed with oils at 5% concentration in contrast to 69% insect survival on control plants. RTV infection was 17-35% in oil-treated plants and 51% in the control. Journal of economic entomology. Oct 1988. v. 81 (5). p. 1369-1372. Includes references. (NAL Call No.: DNAL 421 J822).

0503

Effect of sex type, season, and other factors on in vitro establishment and culture of *Carica papaya* L. explants (Tissue culture, papaya ringspot virus).

Litz, R.E. Conover, R.A. Alexandria, Va., The Society. Journal of the American Society for Horticultural Science. Nov 1981. v. 106 (6). p. 792-794. Includes 5 ref. (NAL Call No.: 81 S012).

0504

Effectiveness of cross-protection by a mild mutant of papaya ringspot virus for control of ringspot disease of papaya in Florida.

McMillan, R.T. Jr. Gonsalves, D. S.I. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. Aug 1988. v. 100. p. 294-296. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

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0505

Effectiveness of cross-protection by mild mutants of papaya ringspot virus for control of ringspot disease of papaya in Taiwan. PLDRA. Wang, H.L. Yeh, S.D.; Chiu, R.J.; Gonsalves, D. St. Paul, Minn. : American Phytopathological Society. Plant disease. June 1987. v. 71 (6). p. 491-497. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0506

Evaluation of induced mutants of papaya ringspot virus for control by cross protection. Yeh, S.D. Gonsalves, D. St. Paul, Minn. : American Phytopathological Society. Phytopathology. Sept 1984. v. 74 (9). p. 1086-1091. ill. Includes 39 references. (NAL Call No.: 464.8 P56).

0507

History, spread, and other palm hosts of lethal yellowing of coconut palms. Martyn, R.D. Midcap, J.T. Gainesville, Fla. : The Service. Circular - Florida Cooperative Extension Service. 1975. (405). 15 p. ill., maps. (NAL Call No.: DNAL 275.29 F66C).

0508

The 'Mayayan dwarf'--a lethal yellowing resistant coconut palm. Midcap, J.T. Martyn, R.D. Gainesville, Fla. : The Service. Circular - Florida Cooperative Extension Service. 1975. (404). 7 p. ill. (NAL Call No.: DNAL 275.29 F66C).

0509

Papaya mosaic virus control program. Holtzmann, O.V. HI. Honolulu. The Service. Miscellaneous publication - Hawaii University. Cooperative Extension Service. Apr 1980. Apr 1980. (178). p. 10-11. (NAL Call No.: S544.3.H3H3).

0510

The primary structure of papaya mosaic virus coat protein. VIRLA. Short, M.N. Turner, D.S.; March, J.F.; Pappin, D.J.C.; Parente, A.; Davies, J.W. Orlando, Fla. : Academic Press. Virology. July 15, 1986. v. 152 (1). p. 280-283. Includes 20 references. (NAL Call No.: DNAL 448.8 V81).

0511

Quantitative comparison of the resistance to Phytophthora root rot in three avocado rootstocks. PHYTAJ. Kellam, M.K. Coffey, M.D. St. Paul, Minn. : American Phytopathological Society. Phytopathology. Feb 1985. v. 75 (2). p. 230-234. ill. Includes 17 references. (NAL Call No.: DNAL 464.8 P56).

0512

Resistance to papaya ringspot virus in Cucumis metuliferus and its relationship to resistance to watermelon mosaic virus 1. Provvidenti, R. Gonsalves, D. Washington, D.C., American Genetic Association. The Journal of heredity. May/June 1982. v. 73 (3). p. 239-240. Includes 13 ref. (NAL Call No.: 442.8 AM3).

0513

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PLANT DISEASES - PHYSIOLOGICAL

0515

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PLPHA. Nunez-Elisea, R. Davenport, T.L. Rockville, Md. : American Society of Plant Physiologists. Plant physiology. Dec 1986. v. 82 (4). p. 991-994. Includes references. (NAL Call No.: DNAL 450 P692).

0516

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0517

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0518

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MISCELLANEOUS PLANT DISORDERS

0521

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0522

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0523

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0524

Frost protection--are you ready? (Frost, avocados, California).
 Vista, Calif., Rancher Publications. Avocado grower. Sept 1980. v. 4 (9). p. 36-37. ill. (NAL Call No.: SB379.A9A9).

0525

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 Sances, F.V.CAVYA. Ting, I.P.; Hogenson, R.O.; McDonald, J.E. Saticoy : The Society. Yearbook - California Avocado Society. 1982. v. 66. p. 145-147, 149-151, 153-154. ill. (NAL Call No.: 81 C128).

0527

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 Tracy, J.E. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1983. v. 67. p. 147-149, 152-158. ill. Includes references. (NAL Call No.: 81 C128).

0528

Nitrogen fertilization, a guarantee for relative resistance of avocado trees to frost.
 JPNUDS. Lahav, E. Kalmar, D.; Bar, Y. New York, N.Y. : Marcel Dekker. Journal of plant nutrition. Paper presented at the "Tenth International Plant Nutrition Colloquium", August 4-9, 1986, Beltsville, Maryland. 1987. v. 10 (9/16). p. 1859-1868. ill. Includes references. (NAL Call No.: DNAL QK867.J67).

0529

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 NONGA. Shanks, J.B. Hamden, Conn. : The Association. Annual report of the Northern Nut Growers Association. 1984. (75th). p. 21-27. ill. (NAL Call No.: DNAL 94.69 N81).

0530

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0531

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 Toumey, J. Vista, Calif. : Rancher Pub. Avocado grower. Aug 1982. v. 6 (8). p. 14-15, 17-18. ill. (NAL Call No.: SB379.A9A9).

0532

Wind-rub damage to kiwifruit: an interpretation of contrasting windbreak and trellis effectiveness.
 McAneney, K.J. Judd, M.J. Bozeman, Mont. : Montana State University, Cooperative Extension Service. Great Plains Agriculture i.e. Agricultural Council publication. Paper presented at the "International Symposium on Windbreak Technology," June 23-27, 1986, Lincoln, Nebraska. 1986. (117). p. 189-190. ill. (NAL Call No.: DNAL S27.A3).

PROTECTION OF PLANT PRODUCTS - GENERAL AND MISC.

0533

Association of pectolytic strains of *Xanthomonas campestris* with soft rots of fruits and vegetables at retail markets.
PHYTAU. Liao, C.H. Wells, J.M. St. Paul, Minn. : American Phytopathological Society. Phytopathology. Mar 1987. v. 77 (3). p. 418-422. Includes references. (NAL Call No.: DNAL 464.8 P56).

0534

Bacterial decomposition of olives during pickling /by W.V. Cruess and E.H. Guthier.
Cruess, W. V. 1886-. Guthier, E. H. 1895-. Berkeley, Cal. : Agricultural Experiment Station, 1923. Cover title. 15 p. : ill. 1 chart ; 24 cm. (NAL Call No.: DNAL 100 C12S (1) no.368).

0535

Comparison of hot-water spray and immersion treatments for control of postharvest decay of papaya (Stem-end rots and anthracnose).
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0536

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Alvarez, A.M. Nelson, M.G. (s.l.). The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1981. v. 36. p. 49. (NAL Call No.: 464.9 AM31R).

0537

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Couey, H.M. AR-W. Farias, G. Alexandria, Va., American Society for Horticultural Science. HortScience. Dec 1979. v. 14 (6). p. 719-721. ill. 5 ref. (NAL Call No.: SB1.H6).

0538

Control of postharvest rots, 1979 (Banana (*Musa* sp.), postharvest rots; *Aspergillus flavus*, *Botryodiplodia theobromae*, *Colletotrichum musae*, *Fusarium* spp.).
Jagirdar, H.A. Pathan, I.H. (s.l.). The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1980. v. 35. p. 168. (NAL Call No.: 464.9 AM31R).

0539

Culture of five commonly used acid-producing bacteria (*Lactobacillus bulgaricus*, *Streptococcus thermophilus*, *Streptococcus faecalis*) on banana pulp (Fruit preservation).
Aegerter, P. Dunlap, C. Washington, D.C., American Society for Microbiology. Applied and environmental microbiology. May 1980. v. 39 (5). p. 937-942. ill. 4 ref. (NAL Call No.: 448.3 AP5).

0540

Development and prevention of chilling injury in papaya fruit.
JDSHB. Chen, N.M. Pauli, R.E. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. July 1986. v. 111 (4). p. 639-643. Includes references. (NAL Call No.: DNAL 81 S012).

0541

Effect of morphactin on the storage behaviour of guava fruits (Postharvest decay control, *Gloeosporium psidii*, *Pestalotia psidii*).
Gupta, V.K. Mukherjee, D. Mount Vernon, Va., The Society. Journal of the American Society for Horticultural Science. American Society for Horticultural Science. Jan 1980. v. 105 (1). p. 115-119. ill. 33 ref. (NAL Call No.: 81 S012).

0542

Effect of orchard spray treatments on postharvest disease control of papaya, 1982 (Anthracnose, spots, stem and rots, *Carica papaya*).
Alvarez, A.M. FNETD. Nelson, M.G. (s.l.) : The Society. Fungicide and nematicide tests : results - American Phytopathological Society. 1983. v. 38. p. 203-204. (NAL Call No.: 464.9 AM31R).

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0543

Effect of postharvest treatments on *Stemphylium* rot of papaya (*Stemphylium lycopersici*). Glazener, J.A. Couey, H.M. St. Paul, Minn. : American Phytopathological Society. Plant disease. Nov 1984. v. 68 (11). p. 986-988. Includes 8 references. (NAL Call No.: 1.9 P69P).

0544

Effectiveness of various postharvest treatments for mango decay control.

McMillan, R.T. Jr. Spalding, D.H.; Reeder, W.F. S.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. Aug 1988. v. 100. p. 7-9. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0545

Effects of chilling on respiration and ethylene production of "Hass" avocado fruit at 20 degrees Celsius (Injury).

Eaks, I.L.HJHSA. Alexandria : American Society for Horticultural Science. HortScience. Apr 1983. v. 18 (2). p. 235-237. Includes references. (NAL Call No.: SB1.H6).

0546

Effects of delays in establishing controlled atmospheres on kiwifruit softening during and following storage.

JOSHÉ. Arpaia, M.L. Mitchell, F.G.; Mayer, G.; Kader, A.A. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. Nov 1984. v. 109 (6). p. 768-770. Includes 11 references. (NAL Call No.: DNAL 81 S012).

0547

Evaluation of CGA 64251 for postharvest disease control of papaya, 1980 (Papaya (*Carica papaya* L 'Kapoho solo'), anthracnose; *Colletotrichum gloeosporioides*, surface rots; *Phomopsis* sp., *Stemphylium* sp., *Phytophthora palmivora*, Stem-end rots; *Ascochyta caricae-papayae* (*mycosphaerella* sp.), *Botryodiplodia theobromae*, *Fusarium* sp., *Phomopsis* sp., *Stemphylium* sp.).

Alvarez, A.M. Nelson, M.G. (s.l.), The Society. Fungicide and nematocide tests; results - American Phytopathological Society. 1981. v. 36. p. 50. (NAL Call No.: 464.9 AM31R).

0548

Evaluation of various treatments for control of postharvest decay of Florida mangos.

Spalding, D.H. s.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. 1986 (pub. 1987). v. 99. p. 97-99. ill. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0549

Feasibility and storage stability of aseptically processed guava and papaya (A progress report).

Chan, H.T. Jr. Cavaletto, C.G. Honolulu, The Institute. Research extension series - University of Hawaii, Hawaii Institute of Tropical Agriculture and Human Resources. May 1981. May 1981. (006). p. 18-20. (NAL Call No.: S481.R4).

0550

Growth inhibition of papaya postharvest pathogens, 1980 (Papaya (*Carica papaya* L 'Kapoho solo'), anthracnose; *Colletotrichum gloeosporioides*, surface rots; *Phomopsis* sp., *Stemphylium* sp., *Phytophthora palmivora*, Stem-end rots; *Ascochyta caricae-papayae* (*Myco-sphaerella* sp.), *Botryodiplodia theobromae*, *Fusarium* sp., *Phomopsis* sp., *Stemphylium* sp.).

Alvarez, A.M. Nelson, M.G. (s.l.), The Society. Fungicide and nematocide tests; results - American Phytopathological Society. 1981. v. 36. p. 50. (NAL Call No.: 464.9 AM31R).

0551

Induction of chilling injury in stored avocados with exogenous ethylene.

Chaplin, G.R.HJHSA. Wills, R.B.H.; Graham, D. Alexandria : American Society for Horticultural Science. HortScience. Dec 1983. v. 18 (6,sec.1). p. 952-953. Includes references. (NAL Call No.: SB1.H6).

0552

Minimizing postharvest diseases of kiwifruit (Methods for handling, storage, and transportation, California).

Sommer, N.F.CAGRA. Fortlage, R.J.; Edwards, D.C. Berkeley : The Station. California agriculture - California Agricultural Experiment Station. Jan/Feb 1983. v. 37 (1/2). p. 16-18. ill. (NAL Call No.: 100 C12CAG).

(PROTECTION OF PLANT PRODUCTS - GENERAL AND MISC.)

0553

Peroxidase and chilling injury in banana fruit. JAFCAU. Toraskar, M.V. Modi, V.V. Washington, D.C. : American Chemical Society. Journal of agricultural and food chemistry. Nov/Dec 1984. v. 32 (6). p. 1352-1354. Includes references. (NAL Call No.: DNAL 381 J8223).

0554

Post harvest disease control at the farm level (Fungicide sprays, sanitation, injury reduction, Hawaii). Nishijima, W.T. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. Oct 1982. Presented at the 17th Annual Hawaii Papaya Industry Association Conference, September, 1981. Oct 1982. (020). p. 33-35. (NAL Call No.: S481.R4).

0555

Postharvest control of banana fruit rots, 1979 (Banana (Musa sp.), postharvest fruit rots; Aspergillus spp., Botryodiplodia theobromae, Colletotrichum musae, Fusarium spp.). Pathan, I.H. Saad, A.T. (s.l.), The Society. Fungicide and nematicide tests; results - American Phytopathological Society. 1980. v. 35. p. 169. (NAL Call No.: 464.9 AM31R).

0556

Postharvest diseases of papaya. PLDRA. Alvarez, A.M. Nishijima, W.T. St. Paul, Minn. : American Phytopathological Society. Plant disease. Aug 1987. v. 71 (8). p. 681-686. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0557

Postharvest handling systems: subtropical fruits. Kader, A.A. Berkeley, Calif. : Coop Ext, Univ of California, Div of Agric and Natural Resources, 1985. Postharvest technology of horticultural crops / Adel A. Kadar et al. . p. 152-156. Includes references. (NAL Call No.: DNAL SB319.7.P67).

0558

Postharvest handling systems: tropical fruits. Sommer, N.F. Berkeley, Calif. : Coop Ext, Univ of California, Div of Agric and Natural Resources, 1985. Postharvest technology of horticultural crops / Adel A. Kadar et al. . p. 157-169. ill. Includes references. (NAL Call No.: DNAL SB319.7.P67).

0559

Prevention of postharvest stress cracks in husked coconuts during transit. Bruton, B.D. Alexandria, The Society. Journal of the American Society for Horticultural Science. Sept 1982. v. 107 (5). p. 905-907. ill. 13 ref. (NAL Call No.: 81 S012).

0560

Resistance of mango pathogens to fungicides used to control postharvest diseases. PLDRA. Spalding, D.H. St. Paul, Minn. : American Phytopathological Society. Plant disease. Dec 1982. v. 66 (12). p. 1185-1186. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0561

Temperature sensitivity of avocado fruit in relation to C2H4 (ethylene) treatment (Chilling injury, stored products). Lee, S.K. Young, R.E. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. Sept 1984. v. 109 (5). p. 689-692. Includes references. (NAL Call No.: 81 S012).

PROTECTION OF PLANT PRODUCTS - INSECTS

0562

Acoustical system to detect larvae in infested commodities.

FETMA. Webb, J.C. Slaughter, D.C.; Litzkow, C.A. Gainesville, Fla. : Florida Entomological Society. Florida entomologist. Dec 1988. v. 71 (4).-p. 492-504. ill. Includes references. (NAL Call No.: DNAL 420 F662).

0563

Alternative quarantine treatments for papaya (Fruit flies).

Couey, H.M. Seo, S.T. Honolulu, The Institute. Research extension series - University of Hawaii, Hawaii Institute of Tropical Agriculture and Human Resources. May 1981. May 1981. (006). p. 13-15. (NAL Call No.: S481.R4).

0564

Calculation of survival from double hot-water immersion treatment for papayas infested with oriental fruit flies (Diptera: Tephritidae).

JEENAI. Hayes, C.F. Chingon, H.T.G.; Nitta, F.A.; Leung, A.M.T. College Park, Md. : Entomological Society of America. Journal of economic entomology. Aug 1987. v. 80 (4). p. 887-890. Includes references. (NAL Call No.: DNAL 421 J822).

0565

Caryedon serratus (Oliver) (Bruchidae) established in northern South America with additional host and locality records from Mexico.

COBLA. Johnson, C.D. Washington, D.C. : Coleopterists Society. The Coleopterists' bulletin. Sept 1986. v. 40 (3). p. 264. Includes references. (NAL Call No.: DNAL 421 C674).

0566

Delayed light emission as a means of predicting papaya susceptibility to fruit fly infestation.

JOSHB. Forbus, W.R. Jr. Chan, H.T. Jr. Alexandria, Va. : The Society. Papayas (*Carica papaya* L.) at seven stages of maturity were harvested in Hawaii and evaluated for differences in intensity of delayed light emission (DLE) and Hunter 'b' values. There was a high correlation ($r = -0.92$) between DLE intensity and Hunter 'b' values for freshly harvested papayas at seven stages of maturity. DLE has a high potential as a rapid screening technique for detecting papayas that are ripe enough to be susceptible to fruit fly infestation. Journal of the American Society for Horticultural Science. May 1989. v. 114 (3). p. 521-525. ill. Includes references. (NAL Call No.: DNAL 81 S012).

0567

Development and prevention of chilling injury in papaya fruit.

JOSHB. Chen, N.M. Paull, R.E. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. July 1986. v. 111 (4). p. 639-643. Includes references. (NAL Call No.: DNAL 81 S012).

0568

Development of a hot-water immersion quarantine treatment for Hawaiian-grown 'Brazilian' bananas (Mediterranean fruit fly, *Ceratitis capitata*).

Armstrong, J.W. JEENA. College Park : Entomological Society of America. Journal of economic entomology. Oct 1982. v. 75 (5). p. 787-790. Includes references. (NAL Call No.: 421 J822).

0569

Disinfection of papaya by microwave radiation (Alternative to fumigation for the control of fruit flies, *Dacus dorsalis*).

Hayes, C.F. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. July 1983. Presented at the 18th annual Hawaii Papaya Industry Association Conference, Honolulu, October, 1982. July 1983. (033). p. 79-80. ill. (NAL Call No.: S481.R4).

0570

EDB (ethylene dibromide) update (Use for post-harvest fumigation of papayas, Rebuttable Presumption Against Registration, Hawaii).

Fujiyama, S. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. Oct 1982. Presented at the 17th Annual Hawaii Papaya Industry Association Conference, September, 1981. Oct 1982. (020). p. 47-50. (NAL Call No.: S481.R4).

0571

Effect of postharvest heat treatments for insect control on the quality and market life of avocados.

HUJSA. Kerbel, E.L. Mitchell, F.G.; Mayer, G. Alexandria, Va. : American Society for Horticultural Science. HortScience. Feb 1987. v. 22 (1). p. 92-94. Includes references. (NAL Call No.: DNAL SB1.H6).

0572

Effects of heat treatments on the ethylene forming enzyme system in papayas. JFDAZ. Chan, H.T. Jr. Chicago, Ill. : The Institute. Journal of food science : an official publication of the Institute of Food Technologists. May/June 1986. v. 51 (3). p. 581-583. Includes references. (NAL Call No.: DNAL 389.8 F7322).

0573

Foods of *Caulophilus* spp. particularly the broadnosed grain weevil, *Caulophilus oryzae* (Gyllenhal), based on interception records (Coleoptera: Curculionidae: Cossoninae) (Pest of avocado seed and other stored products). Whitehead, D.R. Washington, D.C., The Society. Proceedings - Entomological Society of Washington. Jan 1982. v. 84 (1). p. 81-84. 8 ref. (NAL Call No.: 420 W27).

0574

Fumigation of dates with phosphine (for control of *Ephestia cautella*). Leesch, J.G. Redlinger, L.M.; Gillenwater, H.B.; Zehner, J.M. College Park, Entomological Society of America. Journal of economic entomology. Aug 1982. v. 75 (4). p. 685-687. 8 ref. (NAL Call No.: 421 J822).

0575

Gamma irradiation as a quarantine treatment for Caribbean fruit fly infested mangos. Windeguth, D.L. von. s.l. : The Society. Proceedings of the ... annual meeting of the Florida State Horticulture Society. 1986 (pub. 1987). v. 99. p. 131-134. Includes references. (NAL Call No.: DNAL SB319.2.F6F56).

0576

High-temperature, forced-air quarantine treatment for papayas infested with tephritid fruit flies (Diptera: Tephritidae). JEENAI. Armstrong, J.W. Hansen, J.D.; Hu, B.K.S.; Brown, S.A. Lanham, Md. : Entomological Society of America. A high-temperature forced-air (HTFA) disinfestation treatment using four temperature stages was developed to disinfect Hawaii-grown papaya, *Carica papaya* L. cv. Solo, of the egg and larval stages of Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann); melon fly, *Dacus cucurbitae* Coquillett; and oriental fruit fly, *D. dorsalis* Hendel. The four-stage treatment forced 43 +/- 1, 45 +/- 1, 46.5 +/- 1, and 49 +/- 0.5 degrees C hot air over the papaya surfaces until the fruit center temperatures at the end of each temperature stage reached 41 +/- 1.5, 44 +/- 1, 46.5 +/- 0.75, and 47.2 degrees C, respectively. Each of the first three temperature stages required about 2 h to heat

the fruit to the corresponding fruit center temperatures; the last temperature stage required less than 1 h to raise the fruit center temperatures to 47.2 degrees C. Relative humidity of 40-60% during treatment prevented fruit damage. When the fruit center temperatures reached 47.2 degrees C, the papayas were immediately hydrocooled until the fruit center temperatures were less than or equal to 30 degrees C. Phytotoxicity tests showed that the HTFA treatment was not detrimental to fruit quality. Survival tests with the HTFA treatment until final fruit center temperatures were 43.2, 45.2, or 46.2 degrees C showed little or no survival between 46.2 and 47.2 degrees C for *C. capitata*, and between 45.2 and 46.2 degrees C for *D. cucurbitae* and *D. dorsalis*. *D. cucurbitae* was more susceptible to the HTFA treatment than *C. capitata* or *D. dorsalis*. Survival tests also showed that either first or third instars were more susceptible to the HTFA treatment than eggs for all three fruit fly species. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1667-1674. Includes references. (NAL Call No.: DNAL 421 J822).

0577

Hot-water immersion appliance for quarantine research. JEENAI. Sharp, J.L. Lanham, Md. : Entomological Society of America. A hot-water immersion appliance (HWIA) was assembled and used as a research tool in the development of a hot-water immersion quarantine treatment to disinfest mangos in Haiti, Mexico, and Florida that were infested with immature Tephritidae. The HWIA consists of a metal container (approximately 57.2 cm inside diameter and 85.1 cm height) adapted with a metal screen platform positioned inside the container 25.4 cm above the bottom. A submersible pump mounted to the bottom of the platform circulated 1,514-1,893 liters heated water per hour within the container through flexible polybutylene tubing. The water was heated by flames provided by a two-burner, propane gas, hot plate located below the container. The HWIA was easily assembled, durable, mobile, and inexpensive. Journal of economic entomology. Feb 1989. v. 82 (1). p. 189-192. Includes references. (NAL Call No.: DNAL 421 J822).

0578

Hot-water quarantine treatment for mangoes from Mexico infested with Mexican fruit fly and West Indian fruit fly (Diptera: Tephritidae). JEENAI. Sharp, J.L. Ouye, M.T.; Ingle, S.J.; Hart, W.G. Lanham, Md. : Entomological Society of America. Heated water was used in the development of a quarantine treatment to kill Mexican fruit fly, *Anastrepha ludens* (Loew), and West Indian fruit fly, *A. obliqua* (Macquart) infestations in mango, *Mangifera indica* L. Mangoes from Mexico were infested in the laboratory and immersed in water at 46.1 degrees C for 10-70 min to estimate time-mortality relationships. Probit analysis

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of the data estimated the immersion time needed to reach Probit 9 security for a laboratory strain of *A. ludens* as 65.1 min for mixed cultivars ('Haden', 'Tommy Atkins', 'Keitt', and 'Kent'). For a feral strain (wild) in 'Haden', the estimated immersion time was 71.4 min. The estimated immersion times for Probit 9 security for *A. obliqua* in 'Kent' were 66.8 min for a laboratory strain and 83.6 min for a wild strain. A large-scale test resulted in no survivors based on number of normal pupae when 187,114 *A. ludens* (laboratory) in 4,864 'Keitt' and 'Oro'; 226,054 *A. ludens* (wild) in 5,530 'Haden' and 'Tommy Atkins'; 116,869 *A. obliqua* (wild) in 7,703 'Kent'; and 101,049 *A. obliqua* (laboratory) in 8,775 'Keitt', 'Haden', and 'Tommy Atkins' were immersed in water at 46.1 degrees C for 90 min. The market quality of mangoes immersed in water at 46.1 degrees C depended on cultivar, size and shape, maturity, and handling procedures. 'Oro' mangoes immersed in water for 75 min were not damaged. The percentage of acceptable 'Oro' immersed for 90, 105, and 120 min was reduced to 80, 85, and 15%, respectively. 'Kent', 'Tommy Atkins', and 'Keitt' mangoes immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 7, 11, and 14 d were not damaged. 'Haden' mangoes immersed in water at 46.1 degrees C for 90 min, not refrigerated, and held at 23.9 +/- 1 degrees C. were acceptable for 12 d. Journal of economic entomology. Dec 1989. v. 82 (6). p. 1657-1662. Includes references. (NAL Call No.: DNAL 421 J822).

0579

Hot-water quarantine treatment for mangoes from the state of Chiapas, Mexico, infested with Mediterranean fruit fly and Anastrepha serpentina (Wiedemann) (Diptera: Tephritidae). JEENAI. Sharp, J.L. Ouye, M.T.; Ingle, S.J.; Hart, W.G.; Enkerlin H., W.R.; Celedonio H., H.; Toledo A., J.; Stevens, L.; Quintero, E.; Reyes F., J.; Schwarz, A. Lanham, Md. : Entomological Society of America. Heated water was used in the development of a quarantine treatment to kill tephritid larval infestations in mango, *Mangifera indica* L., from the state of Chiapas, Mexico. Infested mangoes were immersed for 20-80 min in water at 45.9-47.1 degrees C for laboratory tests. Probit analysis of the data estimated immersion times needed to reach Probit 9 was 67.5 min for the Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann), and 64.5 min for *Anastrepha serpentina* (Wiedemann). Confirmatory tests resulted in no survivors when 138,443 *C. capitata* larvae in 13,797 infested mangoes and 111,031 *A. serpentina* larvae in 12,089 infested mangoes were immersed in water at 45.9-47.1 degrees C for 90 min. 'Ataulfo' mangoes immersed in water at 46.1 degrees C for 90 min were not damaged; however, none were acceptable after 7 d at 23.9 degrees C. Most mangoes (93.3%) were acceptable if immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 14 d, and 13.3% were acceptable after 7 d at 23-24 degrees C. Only 10% were acceptable if immersed in water at 46.1 degrees C for 90 min and refrigerated at 11.1 degrees C for 21 d. Journal of economic

entomology. Dec 1989. v. 82 (6). p. 1663-1666. Includes references. (NAL Call No.: DNAL 421 J822).

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Hunter b color measurements of papaya using a two-filter system.

HJHSA. Hayes, C.F. Chingon, H.T.G.; Young, H.G.C. Alexandria, Va. : American Society for Horticultural Science. HortScience. Apr 1988. v. 23 (2). p. 399. Includes references. (NAL Call No.: DNAL SB1.H6).

0581

Immersion of Florida mangos in hot water as a quarantine treatment for Caribbean fruit fly (Diptera: Tephritidae).

JEENAI. Sharp, J.L. Ouye, M.T.; Hart, W.; Ingle, S.; Hallman, G.; Gould, W.; Chew, V. Lanham, Md. : Entomological Society of America. Heated water was tested as a quarantine treatment to destroy all instars of the Caribbean fruit fly, *Anastrepha suspensa* (Loew), in mangos, *Mangifera indica* L., from Florida. Infested 'Tommy Atkins' and 'Keitt' were immersed for 20-60 min in water at 46.1-46.7 degrees C. Probit analysis of the data estimated the immersion time required to reach 99.9968% mortality (Probit 9 security) as 60 and 60.5 min for 'Tommy Atkins' and 'Keitt', respectively. A large-scale test resulted in zero survivors based on the number of normal appearing pupae when 116,031 *A. suspensa* larvae in 3,828 infested 'Tommy Atkins', 'Keitt', 'Jubilee', and 'Kent' were immersed in water at 46.1-46.7 degrees C for 90 min. Journal of economic entomology. Feb 1989. v. 82 (1). p. 186-188. Includes references. (NAL Call No.: DNAL 421 J822).

0582

Insect disinfestation of packed dates by gamma-radiation.

Ahmed, M.S.H. Hameed, A.A.; Kadhum, A.A.; Ali, S.R. Honolulu : Hawaii Institute of Tropical Agric. & Human Resources, Univ. of Hawaii, Manoa, 1985. Radiation disinfestation of food and agricultural products : proceedings of an international conference, Honolulu, Hawaii, November 14-18, 1983 / edited by James H. Moy. p. 374-380. Includes 10 references. (NAL Call No.: DNAL TP371.8.R284).

0583

Laboratory trials of methoprene-impregnated waxes for preventing survival of adult oriental fruit flies (Diptera: Tephritidae) from infested papayas.

JEENAI. Saul, S.H. Mau, R.F.L.; Kobayashi, R.M.; Tsuda, D.M.; Nishina, M.S. College Park, Md. : Entomological Society of America. Journal of economic entomology. Apr 1987. v. 80 (2). p.

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494-496. Includes references. (NAL Call No.: DNAL 421 J822).

0584

Papayas get into hot water, leave Hawaii.
AGREA. Whorton, J. Washington, D.C. : The Administration. Agricultural research - U.S. Department of Agriculture, Agricultural Research Service. Feb 1985. v. 33 (2). p. 12. ill. (NAL Call No.: DNAL 1.98 AG84).

0585

Quarantine procedure for Hawaii papaya, using a hot-water treatment and high-temperature, low-dose ethylene dibromide fumigation.
JEENAI. Couey, H.M. Armstrong, J.W.; Hylin, J.W.; Thornburg, W.; Nakamura, A.N.; Linse, E.S.; Ogata, J.; Vetro, R. College Park, Md. : Entomological Society of America. Journal of economic entomology. Aug 1985. v. 78 (4). p. 879-884. Includes references. (NAL Call No.: DNAL 421 J822).

0586

Quarantine procedure for Hawaiian papaya using fruit selection and a two-stage hot-water immersion.
JEENAI. Couey, H.M. Hayes, C.F. College Park, Md. : Entomological Society of America. Journal of economic entomology. Oct 1986. v. 79 (5). p. 1307-1314. Includes references. (NAL Call No.: DNAL 421 J822).

0587

Quarantine procedure for Hawaiian papayas using heat and cold treatments (*Ceratitidis capitata*, *Dacus dorsalis*).
Couey, H.M. Linse, E.S.; Nakamura, A.N. College Park, Md. : Entomological Society of America. Journal of economic entomology. Aug 1984. v. 77 (4). p. 984-986. Includes 9 references. (NAL Call No.: 421 J822).

0588

Relationship of fruit ripeness to infestation in 'Sharwil' avocados by the Mediterranean fruit fly and the Oriental fruit fly (Diptera: Tephritidae).
JEENAI. Oi, D.H. Mau, R.F.L. Lanham, Md. : Entomological Society of America. Harvested and unharvested 'Sharwil' avocados, *Persea americana* Mill., were individually exposed to gravid females of Mediterranean fruit fly, *Ceratitidis capitata* (Wiedemann), or Oriental fruit fly, *Dacus dorsalis* Hendel. Infestations of 0-30% were obtained from avocados exposed at 0-2 postharvest; infestations of 66.7-100% at 3-7 d postharvest. Percent infestations of 15.8 and 4.8% were obtained from unharvested

avocados exposed to *C. capitata* and *D. dorsalis*, respectively. Mean puparial recoveries ranged from 0 to 4.8 puparia per exposed fruit from the unharvested avocados and avocados exposed at 0-2 d postharvest, and recoveries ranged from 7.7 to 135.5 from avocados exposed at 3-7 postharvest. The hard avocado skin seemed to provide a physical barrier which resulted in lower infestations of both fruit fly species in unharvested avocados, and in avocados that were within 3 d postharvest. Journal of economic entomology. Apr 1989. v. 82 (2). p. 556-560. ill. Includes references. (NAL Call No.: DNAL 421 J822).

0589

Responses of 'Fuyu' persimmon to gamma-irradiation.
HUHSA. Wheeler, D.R. Packer, J.E.; MacRae, E.A. Alexandria, Va. : American Society for Horticultural Science. HortScience. Aug 1989. v. 24 (4). p. 635-637. Includes references. (NAL Call No.: DNAL SB1.H6).

0590

Solar heating reduces insect infestations in ripening and drying figs.
HUHSA. Shorey, H.H. Ferguson, L.; Wood, D.L. Alexandria, Va. : American Society for Horticultural Science. HortScience. June 1989. v. 24 (3). p. 443-445. Includes references. (NAL Call No.: DNAL SB1.H6).

0591

A study of ultrasound and microwaves for the control of fruit flies in papaya (Postharvest treatment, Hawaii).
Hayes, C.F. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. Oct 1982. Presented at the 17th Annual Hawaii Papaya Industry Association Conference, September, 1981. Oct 1982. (O2O). p. 51. (NAL Call No.: S481.R4).

0592

Submersion of 'Francis' mango in hot water as a quarantine treatment for the West Indian fruit fly and the Caribbean fruit fly (Diptera: Tephritidae).
JEENAI. Sharp, J.L. Ouye, M.T.; Thalman, R.; Hart, W.; Ingle, S.; Chew, V. College Park, Md. : Entomological Society of America. Heated water was tested as a quarantine treatment to control infestations of 1- to 6-d-old larvae of the West Indian fruit fly, *Anastrepha obliqua* (Macquart), and the Caribbean fruit fly, *A. suspensa* (Loew), in mango, *Mangifera indica* L., 'Francis.' Submersion of infested fruit for 15-60 min at 46.1-46.7°C reduced the number of surviving pupae. Probit analysis of the data estimated submersion time needed to reach

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99.9968% mortality (probit 9 security) as 58.0 and 44.3 min for *A. obliqua* and *A. suspensa*, respectively. A confirmatory test resulted in no survivors based on adult emergence when 147,993 *A. obliqua* larvae in 4,738 infested fruits were submerged in water at 46.1-46.7°C for 65 min, and no survivors when 102,509 *A. suspensa* larvae in 1,892 infested fruits were submerged in water at 46.1-46.7°C for 60 min. 'Francis' mangos submerged in water at 46.1-46.7°C for 75 min and then stored at 25-27°C for 8 d were not damaged. 'Francis' submerged in water at 46.1-46.7°C for 2 h and then refrigerated at 11.1°C for 7 d were not damaged. Percentage of acceptable mangos treated with hot water decreased as exposure time in water at 46.1- 46.7°C increased to 4 h, when all mangos were damaged and were not acceptable following storage at 11.1°C for 7 d or more. Journal of economic entomology. Oct 1988. v. 81 (5). p. 1431-1436. Includes references. (NAL Call No.: DNAL 421 J822).

0593

Temperature control as an alternative to ethylene dibromide fumigation for the control of fruit flies (Diptera: Tephritidae) in papaya (*Dacus dorsalis*).

Hayes, C.F. Chingon, T.G.; Nitta, F.A.; Wang, W.J. College Park, Md. : Entomological Society of America. Journal of economic entomology. June 1984. v. 77 (3). p. 683-686. Includes references. (NAL Call No.: 421 J822).

0594

Tolerance of Florida avocado cultivars to methyl bromide fumigation treatments effective against fruit flies (Tephritidae).

Witherell, P.C.PFSHA. Spalding, D.H.; Benschoter, C.A. Lake Alfred : The Society. Proceedings of the ... annual meeting - Florida State Horticultural Society. 1982. v. 95. p. 227-229. Includes references. (NAL Call No.: 81 F66).

0595

Absorption and translocation of picloram by Lindheimer pricklypear (*Opuntia lindheimeri*).
WEESA6. Mayeux, H.S. Jr. Johnson, H.B. Champaign, Ill. : Weed Science Society of America. Removing the epicuticular wax from mature pads (cladophylls) of Lindheimer pricklypear increased picloram absorption by four- to sixfold in the laboratory, while the addition of surfactant had little effect on absorption. Absorption decreased with increasing pH of the picloram solution, indicating that picloram diffused through the cuticle as the undissociated molecule. Picloram entered detached pads at the areoles more readily than through the surrounding cuticle. In the glasshouse, whole plants consisting of an old, mature pad supporting a young, growing pad absorbed picloram very slowly whether picloram was applied as a spray to old or young pads or to the soil. About 90 and 80% of the applied picloram remained on the waxy surface of old and new pads, respectively, and about 2% of the applied picloram was recovered from within the epicuticular wax after 30 days. Picloram concentrations within pads treated in the glasshouse were greater when the herbicide was applied to new pads (4.6 microgram/g) than old pads (1.9 microgram/g) after 30 days. More picloram was translocated basipetally from treated new pads to untreated old pads than in the opposite direction, but concentrations in untreated pads were low (less than 1 microgram/g). Little picloram was absorbed by roots, compared to pads, and little was translocated into or out of roots. These results conflict with the view that the effectiveness of picloram for pricklypear control is attributable to extensive root uptake and acropetal transport. However, observations of plants 6 months after treatment indicated that soil applications were more effective than sprays in the glasshouse. *Weed science*. Mar 1989. v. 37 (2). p. 161-166. Includes references. (NAL Call No.: DNAL 79.8 W41).

0596

Accumulation and metabolism of bromacil in pineapple sweet orange (*Citrus sinensis*) and *Cleopatra mandarin* (*Citrus reticulata*) (Herbicide).
Jordan, L.S. Clerx, W.A. Champaign, Ill., Weed Science Society of America. *Weed science*. Jan 1981. v. 29 (1). p. 1-5. 9 ref. (NAL Call No.: 79.8 W41).

0597

Banana poka control in Hawaii Volcanoes National Park.
Santos, G.L. Cuddihy, L.W.; Stone, C.P. S.I. : The Society. Research progress report - Western Society of Weed Science. 1988. p. 99. (NAL Call No.: DNAL 79.9 W52R).

0598

Behavioral responses of the cactus bug, *Chelinidea vittiger* Uhler, to fire damaged host plants (Prickly pear cactus, *Opuntia* spp.).
Sickerman, S.L. SENTD. Wangberg, J.K. College Station : Southwestern Entomological Society. *The Southwestern entomologist*. Dec 1983. v. 8 (4). p. 263-267. Includes references. (NAL Call No.: QL461.S65).

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Control and ecology of plains pricklypear cactus (*Opuntia polyacantha*).
Mueller, D.M. Laycock, W.A. Portland, Or., The Society. Abstracts of papers presented at the ... annual meeting of the American Society of Range Management. American Society of Range Management. 1981. 1981. x (34th). p. 7. (NAL Call No.: SB193.A44).

0600

Influence of certain small quantities of 2, 4-D on bananas / by J.W. Hendrix.
Hendrix, J. W. 1915-. Honolulu : Hawaii Agricultural Experiment Station, University of Hawaii College of Agriculture, 1952. 20 p. : ill. ; 23 cm. (NAL Call No.: DNAL 100 H313 (1) no.106).

0601

Internal temperatures of pricklypear cladophylls during prescribed fire in west Texas (Cactus control, *Opuntia lindheimeri*, *Opuntia edwardsii*, range management, ecology).
Potter, R.L. Ueckert, D.N.; Petersen, J.L. College Station : The Station. PR - Texas Agricultural Experiment Station. July 1983. July 1983. (4132). 10 p. Includes references. (NAL Call No.: 100 T31P).

0602

Long-term effects of fire on cactus (*Opuntia phaeacantha*, *Opuntia imbricata*, *Opuntia leptocaulis*) in the southern mixed prairie of Texas.
Bunting, S.C. Wright, H.A.; Neuenschwander, L.F. Denver, Society for Range Management. *Journal of range management*. Mar 1980. v. 33 (2). p. 85-88. ill. 13 ref. (NAL Call No.: 60.18 J82).

0603

Lotebush: thorny confusion.
Landers, J. San Angelo : Scott Campbell, Texas Sheep and Goat Raisers' Association Office. *Ranch magazine*. Aug 1985. v. 66 (11). p. 14. ill. (NAL Call No.: DNAL 45.8 SH3).

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0604

Managing pricklypear with herbicides and fire. Ueckert, D.N. Petersen, J.L.; Potter, R.L.; Whipple, J.D.; Wagner, M.W. College Station, Tex. : Texas Agricultural Experiment Station. Sheep and goat, wool and mohair. In the series analytic: Research Reports--Sheep and Goat, Wool and Mohair, 1988. Forward by Carl Menzies. Sept 1988. (4570). p. 10-15. Includes references. (NAL Call No.: DNAL SF375.4.T4S43).

0605

Natural enemies of *Dactylopius confusus* (Homoptera: Dactylopiidae): exclusion and subsequent impact on *Opuntia* (Cactaceae). EVETEX. Gilreath, M.E. Smith, J.W. Jr. College Park, Md. : Entomological Society of America. Collections of *Opuntia* spp. (Cactaceae) cladophylls infested with *Dactylopius confusus* (Cockerell) from two sites in west central Texas during 1982-84 yielded seven natural enemies, all predators. Major predators were *Laetilia coccidivora* (Comstock), *Leucopis bellula* Williston, and *Hyperaspis trifurcata* Schaeffer. Several parasites and hyperparasites were reared from these predators. No parasites or pathogens of *D. confusus* were detected. Continuous exclusion of natural enemies from cladophylls artificially infested with *D. confusus* resulted in high densities of *D. confusus*. When natural enemies were continuously admitted for comparison, *D. confusus* populations remained below the original infestation levels, and natural enemies admitted after *D. confusus* population densities had increased through at least one generation resulted in an immediate decrease in the *D. confusus* density. When natural enemies were continuously excluded from *D. confusus*-infested cladophylls, up to 81% of the cladophylls became necrotic, and only 4% produced new growth the following spring. However, where natural enemies were admitted, only 8% of the cladophylls manifested necrosis, and 75% produced new growth. Environmental entomology. Aug 1988. v. 17 (4). p. 730-738. Includes references. (NAL Call No.: DNAL QL461.E532).

0606

Preemergence weed control studies emphasizing Surflan (Herbicides, papaya tolerance, Hawaii). Nishimoto, R.K. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. Oct 1982. Presented at the 17th Annual Hawaii Papaya Industry Association Conference, September, 1981. Oct 1982. (020). p. 45-46. Includes references. (NAL Call No.: S481.R4).

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Status of weed control in papayas. Nishimoto, R. HI. Honolulu, The Service. Miscellaneous publication - Hawaii University. Cooperative Extension Service. Apr 1980. Apr 1980. (178). p. 16. (NAL Call No.: S544.3.H3H3).

0608

The yeast community associated with decaying *Opuntia stricta* (Haworth) in Florida with regard to the moth, *Cactoblastis cactorum* (Berg). FLSCA. Starmer, W.T. Aberoeeen, V.; Lachance, M.A. Orlando, Fla. : Florida Academy of Sciences. Florida scientist. Winter 1988. v. 51 (1). p. 7-11. Includes references. (NAL Call No.: DNAL 500 F66).

PESTICIDES - GENERAL

0609

Analysis of ethylene dibromide distribution in the soil profile following shank injection for nematode control in pineapple culture.
Wong, L. Honolulu, Hawaii : The Service. Research extension series - College of Tropical Agriculture and Human Resources, University of Hawaii, Cooperative Extension Service. In the series analytic: Toxic organic chemicals in Hawaii's water resources / edited by P.S.C. Rao and R.E. Green. Nov 1987. (086). p. 28-40. maps. Includes references. (NAL Call No.: DNAL S481.R4).

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Antipest secondary metabolites from African plants.
ACSMC. Hassanali, A. Lwande, W. Washington, D.C. : The Society. ACS Symposium series - American Chemical Society. 1989. v. 387. p. 78-94. ill. Includes references. (NAL Call No.: DNAL QD1.A45).

0611

Biodegradation of metalaxyl in avocado soils.
PHYTAJ. Bailey, A.M. Coffey, M.D. St. Paul, Minn. : American Phytopathological Society. Phytopathology. Feb 1985. v. 75 (2). p. 135-137. ill. Includes 12 references. (NAL Call No.: DNAL 464.8 P56).

0612

Dissipation of phytotoxic diuron residues in Hawaii pineapple soils / V.A. Elder ... et al. --.
Elder, V. A. 1948-. Honolulu : HITAHR, College of Tropical Agriculture and Human Resources, University of Hawaii, 1981. "March 1981". - Cover title. 13 p. : 26 cm. --.
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0613

Effects of organophosphorous pesticides on cutinase activity and infection of papayas by *Colletotrichum gloeosporioides* (Carcia papaya).
Dickman, M.B. PHYTA. Patil, S.S.; Kolattukudy, P.E. St. Paul : American Phytopathological Society. Phytopathology. Aug 1983. v. 73 (8). p. 1209-1214. Includes references. (NAL Call No.: 464.8 P56).

0614

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0615

Glyphosate residues on avocado (Herbicide, *Persea americana*).
Thompson, N.P. Lynch, A.A.; Bardalaye, P.C.; Phillips, R.L. s.l., The Society. Proceedings of the ... annual meeting of the Florida State Horticultural Society. 1980 (pub 1981). v. 93. p. 159-160. ill. 1 ref. (NAL Call No.: 81 F66).

0616

Growth inhibition from guava root exudates (*Psidium guajava*, allelopathy, glyphosate application).
Brown, R.L. HJHSA. Tang, C.S.; Nishimoto, R.K. Alexandria : American Society for Horticultural Science. HortScience. June 1983. v. 18 (3). p. 316-318. ill. Includes references. (NAL Call No.: SB1.H6).

0617

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Isshiki, K. Tsumura, S.; Watanabe, T. Arlington, Va., The Association. Journal of the Association of Official Analytical Chemists. July 1980. v. 63 (4). p. 747-749. ill. 13 ref. (NAL Call No.: 381 AS7).

0618

If insect pheromones are pesticides, / so are bananas.
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Impact of certain pesticides on avocado (Phytotoxicity).
Sances, F.V. CAVYA. Ting, I.P.; Hogenson, R.O.; McDonald, J.E. Saticoy : The Society. Yearbook - California Avocado Society. 1982. v. 66. p. 145-147, 149-151, 153-154. ill. (NAL Call No.: 81 C128).

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0620

Methyl bromide residues in fumigated mangos.
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0621

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Dohn, D.R. Krieger, R.I. New York, N.Y. :
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0622

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0623

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SOIL BIOLOGY

0625

Nitrogen nutrition of the pineapple plant, *Ananas comosus* (L.) Merr., soil nitrogen status, and dynamics of the reniform nematode population, *Rotylenchulus reniformis* Linford and Oliveira, in relation to the form of nitrogen fertilizer, soil acidity, and fumigation / by Edward Jerome Englerth, Jr. - Englerth, Edward Jerome, 1931-. 1969. Thesis (Ph.D.)--University of Hawaii, 1969. Photocopy. Ann Arbor, Mich. : University Microfilms, 1971. viii, 88 leaves ; 21 cm. Bibliography: leaves 84-88. (NAL Call No.: DISS 70-19,508).

SOIL CHEMISTRY AND PHYSICS

0626

Analysis of ethylene dibromide distribution in the soil profile following shank injection for nematode control in pineapple culture.
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0627

Dissipation of phytotoxic diuron residues in Hawaii pineapple soils /V.A. Elder ... et al. --.
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0628

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SOIL FERTILITY - FERTILIZERS

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JAUPA. Perez-Lopez, A. Reyes, R.D. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Jan 1984. v. 68 (1). p. 5-17. Includes 16 references. (NAL Call No.: DNAL 8 P832J).

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Perez Lopez, A. Rio Piedras, University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Oct 1982. v. 66 (4). p. 286-292. 6 ref. (NAL Call No.: 8 P832J).

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0632

Effects of nitrogen and potassium fertilization on growth, fruiting, and petiole composition of bearing papaya plants /M. Awada, R.S. de la Pena, R.H. Suenisa. --.

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JAUPA. Irizarry, H. Rivera, E.; Rodriguez, J. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. July 1988. v. 72 (3). p. 337-351. Includes references. (NAL Call No.: DNAL 8 P832J).

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Blair, A. W. 1866-. Wilson, R. N. 1888-. Gainesville, Fla. : University of Florida Agricultural Experiment Station, 1910. Cover title. p. 29 -51 : charts ; 23 cm. (NAL Call No.: DNAL 100 F66S (1) no.104).

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0651

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Insects injurious to the mango in Florida and how to combat them /by G.F. Moznette.
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Isolation, identification, and synthesis of male-produced sex pheromone of papaya fruit fly, Toxotrypana curvicauda Gerstaecker (Diptera: Tephritidae).
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Isolation, identification, and synthesis of male-produced sex pheromone of papaya fruit fly, *Toxotrypana curvicauda* Gerstaecker (Diptera: Tephritidae).

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NONFOOD AND NONFEED

0654

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BBRCA. Namjuntra, P. Muanwongyathi, P.; Chulavatnatol, M. New York, N.Y. : Academic Press. Biochemical and biophysical research communications. Apr 30, 1985. v. 128 (2). p. 833-839. ill. Includes 13 references. (NAL Call No.: ONAL 442.8 B5236).

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DRAINAGE AND IRRIGATION

0659

Effects of drip irrigation and nitrogen fertilization on vegetative growth, fruit yield, and mineral composition of the petioles and fruits of papaya.

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0662

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Steinhardt, R. Kelmar, D.; Lahav, E.; Shalhevet, Y. Fallbrook, Calif. : Rancher Publications. California grower. June 1988. v. 12 (6). p. 28. (NAL Call No.: DNAL SB379.A9A9).

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FOOD PROCESSING

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FOOD PROCESSING, HORTICULTURAL CROP

0667

Harvest and postharvest handling of Chinese date.

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Kiwifruit.

AFREA. Luh, B.s. Wang, Z. Orlando. Fla. : Academic Press. Advances in food research. 1984. v. 29. p. 279-309. Includes references. (NAL Call No.: DNAL 389 M87).

0669

Papayas get into hot water, leave Hawaii.

AGREA. Whorton, J. Washington. D.C. : The Administration. Agricultural research - U.S. Department of Agriculture, Agricultural Research Service. Feb 1985. v. 33 (2). p. 12. ill. (NAL Call No.: DNAL 1.98 AG84).

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Postharvest handling systems: tropical fruits.

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FOOD STORAGE

0671

The role of the surveyor.

JUASD. Subramaniam, S. Champaign, Ill. : The Society. Journal of the American Oil Chemists' Society. Paper presented at the "World Conference on Processing of Palm, Palm Kernel and Coconut Oils," 1984, Kuala Lumpur, Malaysia. Feb 1985. v. 62 (2). p. 443-448. ill. Includes 1 references. (NAL Call No.: DNAL 307.8 J82).

FOOD STORAGE, HORTICULTURAL CROP

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Bananas--physiology and biochemistry of storage and ripening for optimum quality.
Marriott, J. Boca Raton, Fla., CRC Press. CRC critical reviews in food science and nutrition. 1980. Literature review. v. 13 (1). p. 41-88. ill. 287 ref. (NAL Call No.: TP368.C7).

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Changes in chemical constituents of kiwifruit during post-harvest ripening (Actinidia chinensis).
Matsumoto, S. JFDSA. Obara, T.; Luh, B.S. Chicago : Institute of Food Technologists. Journal of food science. Mar/Apr 1983. v. 48 (2). p. 607-611. Includes references. (NAL Call No.: 389.8 F7322).

0674

Changes in sugars, enzymic activities and acid phosphatase isoenzyme profiles of bananas ripened in air or stored in 2.5% O₂ with and without ethylene.
PLPHA. Kanellis, A.K. Solomos, T.; Mattoo, A.K. Rockville, Md. : American Society of Plant Physiologists. This study investigates the effect of 2.5% O₂, both alone and in combination with ethylene, on respiration, sugar accumulation and activities of pectin methylesterase and acid phosphatase during ripening of bananas (*Musa paradisica sapientum*). In addition, the changes in the phosphatase isoenzyme profiles are also analyzed. Low oxygen diminished respiration and slowed down the accumulation of sugars and development of the yellow color. Furthermore, low O₂ prevented the rise in acid phosphatase activities and this suppression was not reversed by the inclusion of 100 microliters per liter ethylene in 2.5% O₂ atmosphere. Gel electrophoresis of both the soluble and particulate cell-free fractions under nonoxygenating conditions revealed the presence of 8 and 9 isoenzymes in the soluble and particulate fractions, respectively. Low O₂ suppressed the appearance of all isoenzymes, and the addition of 500 microliters per liter ethylene to the low decline in pectin methylesterase that was observed in air-ripened fruits was prevented of 2.5% O₂ alone and in combination with 500 microliters per liter ethylene. Plant physiology. May 1989. v. 90 (1). p. 251-258. Includes references. (NAL Call No.: DNAL 450 P692).

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Development and prevention of chilling injury in papaya fruit.
JOSH. Chen, N.M. Paul, R.E. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. July 1986. v. 111 (4). p. 639-643. Includes references. (NAL Call No.: DNAL 81 S012).

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The effect of growing location and harvest maturity on the storage performance and quality of Hayward' kiwifruit (California).
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JPNUDS. Smith, G.S. Clark, C.J.; Buwalda, J.G. New York, N.Y. : Marcel Dekker. Journal of plant nutrition. Paper presented at the "Tenth International Plant Nutrition Colloquium", August 4-9, 1986, Beltsville, Maryland. 1987. v. 10 (9/16). p. 1939-1946. Includes references. (NAL Call No.: DNAL QK867.J67).

0678

Effects of delays in establishing controlled atmospheres on kiwifruit softening during and following storage.
JOSH. Arpaia, M.L. Mitchell, F.G.; Mayer, G.; Kader, A.A. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. Nov 1984. v. 109 (6). p. 768-770. Includes 11 references. (NAL Call No.: DNAL 81 S012).

0679

Effects of ionizing irradiation (used for control of *Cryptorhynchus mangiferae* and fruit flies) on 'Haden' mangoes (Tolerance and shelf life).
Akamine, E.K. HI. Goo, T. Honolulu, The Station. Research report. Hawaii. Agricultural Experiment Station. Apr 1979. Apr 1979. (205). 11 p. ill. 16 ref. (NAL Call No.: 100 H313P).

0680

Effects of low oxygen concentration on fruit respiration: nature of respiratory diminution (Apples, bananas, sweet potato).
Solomos, T. Beaverton, Or. : Timber Press. (1982). Proc. Third Natl. Controlled Atmosphere Research Conf. on Controlled Atmospheres for Storage and Transport of Perishable Agric. Commodities, July 22-24, 1981, Ore. State Univ., Corvallis / D.G. Richardson, M.M. Meheriuk, eds. p. 161-170. 24 ref. (NAL Call No.: TP373.3.C66 1982).

0681

Hydrolytic enzyme activities and protein pattern of avocado fruit ripened in air and in low oxygen, with and without ethylene.
 PLPHA. Kanellis, A.K. Solomos, T.; Mattoo, A.K. Rockville, Md. : American Society of Plant Physiologists. The effect of 2.5% O₂ atmosphere with and without ethylene on the activities of hydrolytic enzymes associated with cell walls, and total protein profile during ripening of avocado fruits (*Persea americana* Mill., cv Hass) were investigated. The low 2.5% O₂ atmosphere prevented the rise in the activities of cellulase, polygalacturonase, and acid phosphatase in avocado fruits whose ripening was initiated with ethylene. Addition of 100 microliters per liter ethylene to low O₂ atmosphere did not alter these suppressive effects of 2.5% O₂. Furthermore, 2.5% O₂ atmosphere delayed the development of a number of polypeptides that appear during ripening of avocado fruits while at the same time new polypeptides accumulated. The composition of the extraction buffer and its pH greatly affected the recovery of cellulase activity and its total immunoreactive protein. *Plant physiology*. May 1989. v. 90 (1). p. 259-266. ill. Includes references. (NAL Call No.: DNAL 450 P692).

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Injury to avocados by insufficient oxygen and excessive carbon dioxide during transit (*Persea americana*, Europe, California, Florida).
 Spalding, D.H. Marousky, F.J. S.I., The Society. Proceedings of the ... annual meeting of the Florida State Horticultural Society. 1981 (pub. 1982). v. 94. p. 299-301. ill. Includes 7 ref. (NAL Call No.: 81 F66).

0683

Insect disinfestation of packed dates by gamma-radiation.
 Ahmed, M.S.H. Hameed, A.A.; Kadhum, A.A.; Ali, S.R. Honolulu : Hawaii Institute of Tropical Agric. & Human Resources, Univ. of Hawaii. Manoa, 1985. Radiation disinfestation of food and agricultural products : proceedings of an international conference, Honolulu, Hawaii, November 14-18, 1983 / edited by James H. Moy. p. 374-380. Includes 10 references. (NAL Call No.: DNAL TP371.8.R284).

0684

Minimizing postharvest diseases of kiwifruit (Methods for handling, storage, and transportation, California).
 Sommer, N.F. CAGRA. Fortlage, R.J.; Edwards, D.C. Berkeley : The Station. California Agriculture - California Agricultural Experiment Station. Jan/Feb 1983. v. 37 (1/2). p. 16-18. ill. (NAL Call No.: 100 C12CAG).

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 Itoo, S. Boca Raton, Fla. : CRC Press, 1986. CRC handbook of fruit set and development / edited by Shaul P. Monselise. p. 355-370. ill. Includes references. (NAL Call No.: DNAL SB357.28.C73).

0686

Pineapple.
 Bartholomew, D.P. Paull, R.E. Boca Raton, Fla. : CRC Press, 1986. CRC handbook of fruit set and development / edited by Shaul P. Monselise. Literature review. p. 371-388. Includes references. (NAL Call No.: DNAL SB357.28.C73).

0687

Postharvest handling systems: subtropical fruits.
 Kader, A.A. Berkeley, Calif. : Coop Ext, Univ of California, Div of Agric and Natural Resources, 1985. Postharvest technology of horticultural crops / Adel A. Kadar et al. . p. 152-156. Includes references. (NAL Call No.: DNAL SB319.7.P67).

0688

Resistance of mango pathogens to fungicides used to control postharvest diseases.
 PLDRA. Spalding, D.H. St. Paul, Minn. : American Phytopathological Society. *Plant disease*. Dec 1982. v. 66 (12). p. 1185-1186. Includes references. (NAL Call No.: DNAL 1.9 P69P).

0689

Respiratory rate, ethylene production, and ripening response of avocado fruit to ethylene or propylene following harvest at different maturities.
 Eaks, J.L. Alexandria, Va., The Society. *Journal of the American Society for Horticultural Science*. Sept 1980. v. 105 (5). p. 744-747. ill. 13 ref. (NAL Call No.: 81 S012).

0690

Responses of 'Fuyu' persimmon to gamma-irradiation.
 HJHSA. Wheeler, D.R. Packer, J.E.; MacRae, E.A. Alexandria, Va. : American Society for Horticultural Science. *HortScience*. Aug 1989. v. 24 (4). p. 635-637. Includes references. (NAL Call No.: DNAL SB1.H6).

(FOOD STORAGE, HORTICULTURAL CROP)

0691

Shelf-life and acceptability of hot water-treated mangos.

JAUPA. Diaz, N. Rodriguez, T.; Coloni, I.B. de. Mayaguez : University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. July 1988. v. 72 (3). p. 469-474. Includes references. (NAL Call No.: DNAL 8 P832J).

0692

Thiabendazole to control post-harvest decay on papayas.

Couey, H.M. HI-AR-W. Farias, G. Honolulu, The Service. Miscellaneous publication - Hawaii University. Cooperative Extension Service. Apr 1980. Apr 1980. (178). p. 17-19. 5 ref. (NAL Call No.: S544.3.H3H3).

FOOD CONTAMINATION AND TOXICOLOGY

0693

The role of the surveyor.

JJASD. Subramaniam, S. Champaign, Ill. : The Society. Journal of the American Oil Chemists' Society. Paper presented at the "World Conference on Processing of Palm, Palm Kernel and Coconut Oils," 1984, Kuala Lumpur, Malaysia. Feb 1985. v. 62 (2). p. 443-448. ill. Includes 1 references. (NAL Call No.: DNAL 307.8 J82).

FOOD CONTAMINATION, HORTICULTURAL CROP

0694

EDB (ethylene dibromide) update (Use for post-harvest fumigation of papayas, Rebuttable Presumption Against Registration, Hawaii). Fujiyama, S. Honolulu : The Institute. Research extension series - Hawaii Institute of Tropical Agriculture and Human Resources. Oct 1982. Presented at the 17th Annual Hawaii Papaya Industry Association Conference, September, 1981. Oct 1982. (020). p. 47-50. (NAL Call No.: S481.R4).

0699

Quantification of carbaryl in pineapples by HPLC (high performance liquid chromatography) and GCMS-CI-NH₃ (gas chromatography mass spectrometry using ammonia ionization). Cairns, T. Siegmund, E.G.; Doose, G.M.; Langham, W.S.; Chiu, K.S. New York, N.Y. : Springer-Verlag. Bulletin of environmental contamination and toxicology. Mar 1984. v. 32 (3). p. 310-315. Includes references. (NAL Call No.: RA1270.P35A1).

0695

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Washington : Office of Public Awareness. EPA Environmental Protection Agency journal. Apr 1984. v. 10 (4). p. 18-19. ill. (NAL Call No.: TD171.U5).

0696

High performance liquid chromatography of thiabendazole residues in banana and citrus fruits.

Isshiki, K. Tsumura, S.; Watanabe, T. Arlington, Va., The Association. Journal of the Association of Official Analytical Chemists. July 1980. v. 63 (4). p. 747-749. ill. 13 ref. (NAL Call No.: 381 AS7).

0697

Methyl bromide residues in fumigated mangos.

JAFCAU. Stein, E.R. Wolfenbarger, D.A. Washington, D.C. : American Chemical Society. Journal of agricultural and food chemistry. Nov/Dec 1989. v. 37 (6). p. 1507-1509. Includes references. (NAL Call No.: DNAL 381 J8223).

0698

Occurrence of free and conjugated 12,13-epoxytrichothecenes and zearalenone in banana fruits infected with *Fusarium moniliforme*.

APMBA. Chakrabarti, D.K. Ghosal, S. Washington, D.C. : American Society for Microbiology. Applied and environmental microbiology. Jan 1986. v. 51 (1). p. 217-219. ill. Includes 15 references. (NAL Call No.: DNAL 448.3 AP5).

FOOD COMPOSITION, HORTICULTURAL CROP

0700

Avocado mesocarp; browning potential, carotenoid content, polyphenol oxidase, catalase and peroxidase activities: comparison between six avocado cultivars.
Sharon-Raber, O. JFDA. Kahn, V. Chicago : Institute of Food Technologists. Journal of food science. Nov/Dec 1983. v. 48 (6). p. 1874-1875. Includes references. (NAL Call No.: 389.8 F7322).

0701

Changes in sugars, enzymic activities and acid phosphatase isoenzyme profiles of bananas ripened in air or stored in 2.5% O₂ with and without ethylene.
PLPHA. Kanellis, A.K. Solomos, T.; Mattoo, A.K. Rockville, Md. : American Society of Plant Physiologists. This study investigates the effect of 2.5% O₂, both alone and in combination with ethylene, on respiration, sugar accumulation and activities of pectin methylesterase and acid phosphatase during ripening of bananas (*Musa paradisiaca sapientum*). In addition, the changes in the phosphatase isoenzyme profiles are also analyzed. Low oxygen diminished respiration and slowed down the accumulation of sugars and development of the yellow color. Furthermore, low O₂ prevented the rise in acid phosphatase activities and this suppression was not reversed by the inclusion of 100 microliters per liter ethylene in 2.5% O₂ atmosphere. Gel electrophoresis of both the soluble and particulate cell-free fractions under non-denaturing conditions revealed the presence of 8 and 9 isoenzymes in the soluble and particulate fractions, respectively. Low O₂ suppressed the appearance of all isoenzymes, and the addition of 500 microliters per liter ethylene to the low decline in pectin methylesterase that was observed in air-ripened fruits was prevented of 2.5% O₂ alone and in combination with 500 microliters per liter ethylene. Plant physiology. May 1989. v. 90 (1). p. 251-258. Includes references. (NAL Call No.: DNAL 450 P692).

0702

Effects of heat treatments on the ethylene forming enzyme system in papayas.
JFDAZ. Chan, H.T. Jr. Chicago, Ill. : The Institute. Journal of food science : an official publication of the Institute of Food Technologists. May/June 1986. v. 51 (3). p. 581-583. Includes references. (NAL Call No.: DNAL 389.8 F7322).

0703

Growth and compositional changes during development of lanzone fruit.
HUHSA. Paull, R.E. Goo, T.; Chen, N.J. Alexandria, Va. : American Society for Horticultural Science. HortScience. Dec 1987. v. 22 (6). p. 1252-1253. Includes references. (NAL Call No.: DNAL SB1.H6).

0704

Growth, yield, nutrient content and fruit quality of *Carica papaya* L. under controlled conditions. I. Nitrogen effects.
Perez, A. Childers, N.F. Rio Piedras, University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1982. v. 66 (2). p. 71-79. ill. 21 ref. (NAL Call No.: 8 P832J).

0705

Growth, yield, nutrient content and fruit quality of *Carica papaya* L. under controlled conditions. II. Boron effects.
Perez, A. Childers, N.F. Rio Piedras, University of Puerto Rico, Agricultural Experiment Station. The Journal of agriculture of the University of Puerto Rico. Apr 1982. v. 66 (2). p. 80-88. ill. 19 ref. (NAL Call No.: 8 P832J).

0706

Hydrolytic enzyme activities and protein pattern of avocado fruit ripened in air and in low oxygen, with and without ethylene.
PLPHA. Kanellis, A.K. Solomos, T.; Mattoo, A.K. Rockville, Md. : American Society of Plant Physiologists. The effect of 2.5% O₂ atmosphere with and without ethylene on the activities of hydrolytic enzymes associated with cell walls, and total protein profile during ripening of avocado fruits (*Persea americana* Mill., cv Hass) were investigated. The low 2.5% O₂ atmosphere prevented the rise in the activities of cellulase, polygalacturonase, and acid phosphatase in avocado fruits whose ripening was initiated with ethylene. Addition of 100 microliters per liter ethylene to low O₂ atmosphere did not alter these suppressive effects of 2.5% O₂. Furthermore, 2.5% O₂ atmosphere delayed the development of a number of polypeptides that appear during ripening of avocado fruits while at the same time new polypeptides accumulated. The composition of the extraction buffer and its pH greatly affected the recovery of cellulase activity and its total immunoreactive protein. Plant physiology. May 1989. v. 90 (1). p. 259-266. ill. Includes references. (NAL Call No.: DNAL 450 P692).

(FOOD COMPOSITION, HORTICULTURAL CROP)

0707

Lipid changes in olive fruit under saline conditions.

Marzouk, B. Zarrouk, M.; Cherif, A. Champaign, Ill. : American Oil Chemists' Society, 1986. Proceedings World Conference on Emerging Technologies in the Fats and Oils Industry, Cannes, France, November 3-8, 1985 / edited by A.R. Baldwin. p. 408-409. Includes references. (NAL Call No.: DNAL TP669.5.W67 1985).

0708

Loquat (Production, chemical composition).

Shaw, P.E. Westport, Conn., AVI Pub. Co., 1980. Tropical and subtropical fruit : composition, properties, and uses, by Steven Nagy, Philip E. Shaw. Literature review. p. 479-491. Bibliography p. 489-491. (NAL Call No.: TX557.N33).

0709

Physiological gradient in avocado fruit.

CAVYA. Schroeder, C.A. Saticoy, Calif. : The Society. Yearbook - California Avocado Society. 1985. v. 69. p. 137-143. ill. Includes 16 references. (NAL Call No.: DNAL 81 C128).

0710

Sapodilla and prickly pear (Varieties, chemical composition).

Lakshinarayana, S. Westport, Conn., AVI Pub. Co., 1980. Tropical and subtropical fruit : composition, properties, and uses, by Steven Nagy, Philip E. Shaw. Literature review. p. 415-441. Bibliography p. 438-441. (NAL Call No.: TX557.N33).

0711

Studies on enzymes involved in the biogenesis of lipid derived volatiles in ripening mango (*Mangifera indica* L.) fruit.

JFBID. Selvaraj, Y. Trumbull, Conn. : Food and Nutrition Press. Journal of food biochemistry. 1989. v. 12 (4). p. 289-299. Includes references. (NAL Call No.: DNAL TX545.J6).

0712

Sugar /acid composition and development of sweet and tart carambola fruit.

JQSHB. Campbell, C.A. Koch, K.E. Alexandria, Va. : The Society. The oxalic-acid-accumulating fruit of carambola (*Averrhoa carambola* L. Oxalidaceae) was examined during development to characterize changes in sugars and acids and to evaluate potential maturity indices. Commercial maturity (color break) occurred 65 and 60 days after fruit set of sweet 'Arkin' and tart 'Golden Star', respectively. Fruit size at this

stage was highly variable (51 to 103 mm long) and not a reliable indicator of maturity. Total soluble sugar concentration, mainly glucose and fructose, was almost 25% greater in the sweet 'Arkin' fruit (approximately 27 mg.g⁻¹ fresh weight) than in the tart 'Golden Star' carambolas (22 mg.g⁻¹ fresh weight). At harvest, sucrose made up only 15% to 20% of the total soluble sugars. Oxalic acid was the predominant organic acid in young fruit of both cultivars, but levels differed dramatically between sweet 'Arkin' (approximately 1 mg.g⁻¹ fresh weight) and tart 'Golden Star' (approximately 7 mg.g⁻¹ fresh weight). Malic acid (less than 1.5 mg.g⁻¹ fresh weight) was also present. Acidity in sweet 'Arkin' carambolas declined rapidly during early growth, but remained high during development of tart 'Golden Star'. Sugar accumulation, acid reduction, and color development continued for at least 7 days after color break if fruit remained on trees, but such fruit were not firm enough for typical commercial handling. Journal of the American Society for Horticultural Science. May 1989. v. 114 (3). p. 455-457. Includes references. (NAL Call No.: DNAL 81 S012).

0713

The use of antioxidants to delay the onset of anthracnose and stem end decay in avocado fruits after harvest.

PLDIDE. Prusky, D. St. Paul, Minn. : American Phytopathological Society. Plant disease. May 1988. v. 72 (5). p. 381-384. ill. Includes references. (NAL Call No.: DNAL 1.9 P69P).

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0714

Effect of mixtures of custard-apple oil and neem oil on survival of *Nephotettix virescens* (Homoptera: Cicadellidae) and on rice tungro virus transmission (*Annona squamosa*, *Azadirachta indica*).

Mariappan, V. Saxena, R.C. College Park, Md. Entomological Society of America. Journal of economic entomology. Apr 1984. v. 77 (2). p. 519-521. Includes references. (NAL Call No.: 421 J822).

0715

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JJASD. Eng, T.G. Tat, M.M. Champaign, Ill. : The Society. Journal of the American Oil Chemists' Society. Paper presented at the "World Conference on Processing of Palm, Palm Kernel and Coconut Oils," 1984, Kuala Lumpur, Malaysia. Feb 1985. v. 62 (2). p. 274-282. ill. Includes 19 references. (NAL Call No.: DNAL 307.6 J82).

0716

A sperm-agglutinating lectin from seeds of jack fruit (*Artocarpus heterophyllus*).

BBRCA. Namjuntra, P. Muanwongyathi, P.; Chulavatnatol, M. New York, N.Y. : Academic Press. Biochemical and biophysical research communications. Apr 30, 1985. v. 128 (2). p. 833-839. ill. Includes 13 references. (NAL Call No.: DNAL 442.8 85236).

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0717

Analysis of ethylene dibromide distribution in the soil profile following shank injection for nematode control in pineapple culture.

Wong, L. Honolulu, Hawaii : The Service. Research extension series - College of Tropical Agriculture and Human Resources, University of Hawaii, Cooperative Extension Service. In the series analytic: Toxic organic chemicals in Hawaii's water resources / edited by P.S.C. Rao and R.E. Green. Nov 1987. (086). p. 28-40. maps. Includes references. (NAL Call No.: DNAL S481.R4).

0718

Groundwater contamination by nematicides: influence of recharge timing under pineapple crop.

WARBA. Oki, D.S. Giambelluca, T.W. Minneapolis, Minn. : American Water Resources Association. Water resources bulletin. Apr 1989. v. 25 (2). p. 285-294. maps. Includes references. (NAL Call No.: DNAL 292.9 AM34).

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0719

An agrometeorological model for assessing the effect of heat stress during the flowering and early fruit set on avocado yields.
JOSHB. Lomas, U. Alexandria, Va. : The Society. Journal of the American Society for Horticultural Science. Jan 1988. v. 113 (1). p. 172-176. Includes references. (NAL Call No.: DNAL 81 S012).

0720

Extension of model to predict survival from heat treatment of papaya infested with oriental fruit flies (Diptera: Tephritidae).
JEENAI. Hayes, C.F. Young, H. Lanham, Md. : Entomological Society of America. The previously published model used for calculating survival of *Dacus dorsalis* Hendel in papaya (*Carica papaya* L. var. Solo) subjected to a hot-water immersion treatment is extended. The new model allows the calculation of survival for treatments including the vapor heat and dry air treatments. The physical parameter needed to extend the model to these treatments is h , the surface heat transfer coefficient. Measurements of h are reported for papaya in high- and low-humidity environments of moving and static air. Journal of economic entomology. Aug 1989. v. 82 (4). p. 1157-1160. Includes references. (NAL Call No.: DNAL 421 J822).

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0721

Palm tissue culture : state of the art and its application to the coconut / by A. Kovoov. -.
Kovoov, A. Rome Food and Agriculture
Organization of the United Nations 1981. Paper
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HUMAN MEDICINE, HEALTH AND SAFETY

0722

Inhibitory effects of various flavonoids isolated from leaves of persimmon on angiotensin-converting enzyme activity.

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0723

Molluscicides from the cashew *Anacardium occidentale* and their large-scale isolation.

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0724

Occupational exposure to 1,3-dichloropropene (Telone II) in Hawaiian pineapple culture.

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0725

Evaluation of the mid-infrared (1.45 to 2.0 micrometer) with a black-and-white infrared video camera.

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Tamarillo

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